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Pakistan Promoting Rural Growth and Poverty Reduction

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ABBREVIATIONS AND ACRONYMS

ADBP	Agriculture Development Bank of Pakistan	MPA	Member of the Provincial Assemblies
AKRSP	Aga Khan Rural Support Programme	NRSP	National Rural Support Programme
APDPIP	Andhra Pradesh District Poverty Initiatives Project	NWFP	North West Frontier Province
APRPRP	Andhra Pradesh Rural Poverty Reduction Project	OPP	Orangi Pilot Project
APT	Appointment, Promotion and Transfer	PASSCO	Pakistan Agricultural Storage and Supplies Corporation
AWB	Area Water Board	PIHS	Pakistan Integrated Household Survey
CCB	Citizen Community Board	PPAF	Pakistan Poverty Alleviation Fund
CDD	Community-driven Development	PRHS	Pakistan Rural Household Survey
CPR	Common Pool Resources	PSLM	Pakistan Social and Living Standards Measurement Survey
CRP	Community Resource Persons	RIC	Rural Investment Climate Survey
CSP	Child Support Program	RSP	Rural Support Program
DCO	District Coordination Officer	RSPN	Rural Support Program Network
DDO	Deputy District Office	SAM	Social Accounting Matrix
EDO	Executive District Officer	SBP	State Bank of Pakistan
FO	Farmer Organization	SHG	Self Help Group
FSP	Food Support Program	TCP	Trading Corporation of Pakistan
GDP	Gross Domestic Product	TMA	<i>Tehsil</i> Municipal Authority
HIES	Household Income and Expenditure Survey	TMO	<i>Tehsil</i> Municipal Officer
ICAR	Indian Council for Agricultural Research	TO	<i>Tehsil</i> Officer
IKP	Indira Kranti Patham	TPP	Tameer-e-Pakistan program
ILO	International Labor Organization	VDC	Village Development Committee
IRRI	International Rice Research Institute	VOs	Village Organizations
KPP	Khusal Pakistan Program	WUAs	Water User Association
MINFAL	Ministry of Food, Agriculture and Livestock	ZTBL	Zarai Taraqiati Bank Ltd. (formerly ADBP)
MNA	Member of the National Assembly		

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EXECUTIVE SUMMARY

Over the last century, Pakistan has successfully harnessed the Indus River to develop a major irrigated-agriculture sector that remains the backbone of its economy. However, the country is divided by income inequality and geographic disparities that are an increasing source of concern, and which are likely to be potentially destabilizing. These divisions are particularly pronounced in the agriculture sector, as most of the rural poor lack access to land and irrigation water. Ensuring efficient use of water and building proactive partnerships that involve the private sector can contribute to fulfillment of agriculture's potential for diversification and growth.

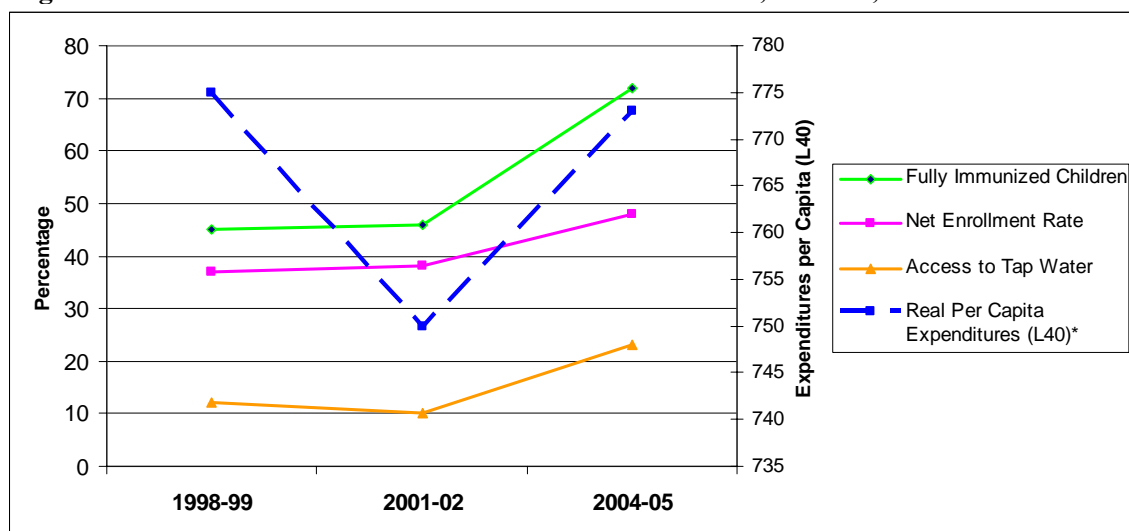
However, for the rural non farm poor, escaping poverty will also likely require a combination of migration and a revitalization of the rural economy, which generates substantial rural employment. Expansion of the rural non-agriculture sector and improvements in the welfare of the rural poor will not occur however, without the undertaking of significant investments in infrastructure and improvements in social services, including safety nets. Two critical elements must underpin the necessary transformation of the rural sector. First is the efficiency of public institutions and the need to make these more accountable and flexible. Second is the capacity to organize the "people sector" so that farmers, communities and villages gain a voice and achieve the scale needed to attract the private sector and financial services as well as to strengthen the demand side of development by making government more accountable.

BACKGROUND

After a decade of moderate growth but little or no long-term change in rural poverty in Pakistan, agricultural output, rural incomes, rural poverty and social welfare indicators all showed marked improvement between 2001-02 and 2004-05: Real agricultural GDP per capita rose by 7.4 percent; average per capita rural expenditures rose by 5.9 percent; and per capita expenditures of the poorest two quintiles rose by 3.1 percent. Further, rural poverty declined from 39.1 percent to 34.0 percent according to World Bank estimates. Other rural welfare indicators improved even more sharply. Child immunization rates rose by 26 percentage points, from 46 percent to 72 percent; net primary school enrollment rose by 10 percentage points, from 38 percent to 48 percent; and access to tap water in the home rose by 13 percentage points, from 10 percent to 23 percent.

These impressive achievements notwithstanding, there is not yet cause for complacency. Approximately 35 million rural people remain poor (accounting for about 80 percent of Pakistan's poor), and rural poverty rates in 2004-05 were still at levels approximating those of the 1990s. And in spite of improvements, non-income measures of welfare related to health and education are low in comparison with those of other countries in South Asia. Infant mortality per 1000 live births is 82 in Pakistan (88 in rural areas), compared to only 62 in India, 56 in Bangladesh and 12 in Sri Lanka. The national primary school enrollment rate for girls in Pakistan is only 48 percent (42 percent in rural areas), compared to 86 percent in India.

Figure 1: Social Indicators of Rural Households in Pakistan, 1988-99, 2001-02 and 2004-05



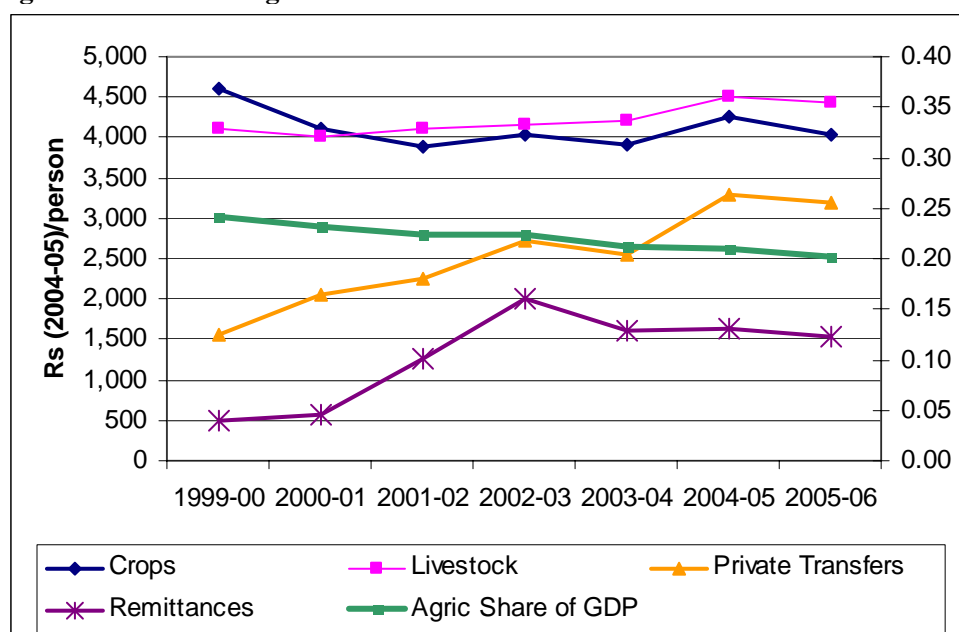
Source: PIHS 1998-99, 2001-02; PSLM 2004-05.

Notes: * Real per capita expenditures of the bottom 40 percent of rural households, Rs (2004-05)/capita.

Moreover, not all improvements in incomes are the result of government policies or sustainable increases in private-sector productivity. Impressive gains in agricultural output and real incomes of the rural poor relative to 2001-02 levels is in part a reflection of low output and incomes in that year due to drought and other adverse shocks. The longer term agricultural GDP per capita growth rate (1999-2000 to 2004-05) was only 0.3 percent annually. In addition, much of the improvement in total incomes can be attributed to a steep rise in net private unrequited transfers from abroad (including workers' remittances). By 2005-06 these transfers averaged more than Rs 3,000 per person for Pakistan's entire population, equivalent to more than two-thirds the real output of crop agriculture or livestock production, (Figure 2). Yet, these transfer incomes, some of which accrue to rural households or are spent on rural and small-town products and services, may not continue to grow at the rates of recent years. Workers' remittances, a major component of these transfers, have stagnated over the last three years.

Pakistan has already taken important steps to spur agricultural growth and farmer incomes through liberalization of trade and pricing policies. Implicit taxation of tradable agricultural products through trade policy and real exchange distortions was largely eliminated in the late 1980s and the 1990s. Likewise, direct government intervention in agricultural markets is now minimal, with the exception of wheat. The country is also taking steps to promote its agricultural exports and has joined the Cairns group in the WTO negotiations. Pakistan's agriculture, particularly its irrigated crop and livestock sub sectors, are poised for gains in competitiveness if the country can develop and diversify higher value supply chains and if the recent exchange-rate appreciation does not become a limiting factor to its export potential.

Figure 2: Trends in Agricultural GDP and Net Private Transfers in Pakistan



Source: Pakistan Economic Survey, (various years) and authors' calculations.

Notes: Per capita figures are calculated using the total population of Pakistan.

Who are the Rural Poor?

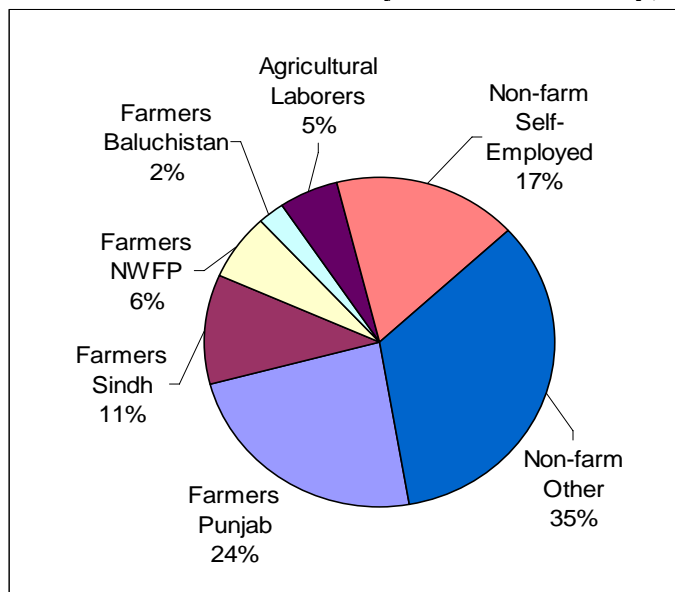
Although agriculture is at the heart of the rural economy, the majority of Pakistan's rural poor are neither tenant farmers nor farm owners. Farmers (including both owners and tenants) comprised only 43 percent of households in the bottom 40 percent of the rural per capita expenditure distribution in 2004-05. Non-farm households (excluding agricultural laborer households) accounted for slightly more than half (52 percent) of the poor. Overall, agriculture (including both crop and livestock production) accounts for only about 40 percent of rural household incomes; the poorest 40 percent of rural households derive only about 30 percent of their total income from agriculture.

Growing Disparities

A major reason for the large proportion of rural non-farm poor in Pakistan, as well as poverty levels among small farmers, is the prevailing highly unequal distribution of land and access to water. According to the 2000 Agricultural Census, only 37 percent of rural households owned land, and 61 percent of these land-owning households owned fewer than five acres, or 15 percent of total land. Access to usable water is also quite unequal, a major cause of lower productivity in the dry lands (*barani*) relative to irrigated land, land at the tail end of watercourses relative to land at the head end, and areas with saline groundwater as compared with areas that have sweet groundwater. Because of this skewed distribution of ownership and access to productive assets, much of the direct gains in income from crop production, particularly irrigated agriculture, accrue to higher-income farmers.¹

¹ In principle, land reform could help reduce the inequality of land distribution. Past land reforms in Pakistan involving land ownership ceilings faced substantial opposition, however, and had only limited effects. One alternative is sales or grants of government land to the poor. Another option is market-based

Figure 3: Rural Poor in Pakistan by Household Group, 2004-05



Source: Calculated using PSLM 2004-05

Notes: The poor are defined as households in the bottom 40 percent of the rural adult equivalent per capita expenditure distribution. Livestock herders who do not receive any crop income, (four percent of the rural poor), are included in the Non-farm other category.

Additional measures to accelerate rural income growth and poverty reduction are essential if Pakistan is to extend the promising trends in growth, poverty reduction and social welfare of the past several years. In addition to land and water, unequal distribution of household income and access to public services, both within and across provinces, is predominant. These disparities threaten not only future growth and poverty reduction, but social cohesion and stability, as well. Thus, inclusive growth that enhances the welfare of the rural poor is essential for Pakistan's future. The alternative is more extreme inequality and polarization, with large pockets of poverty in rural areas and accelerated migration of unskilled people to urban areas that will find it increasingly difficult to provide needed employment and social services.

Agricultural growth is not enough

Agricultural growth is a necessary, but not sufficient, condition for rapid reduction of rural poverty. Agricultural growth remains important to raise the incomes of small farmers and to generate growth linkages by increasing demand for rural non-farm goods and services. However, in most of rural Pakistan, the impact of agricultural growth linkages on rural poverty is limited for two reasons. First, much of the gains in rural incomes are spent on urban goods and services. Second, gains to non-agricultural rural incomes and employment as a result of growth linkages are shared among a large number of rural poor.

Pakistan's rural and small-town non-farm sector, however, faces numerous constraints, particularly concerning access to credit and inadequate infrastructure. As in other South Asian countries, the non-farm sector in Pakistan's rural villages and small towns primarily consists of family based micro-enterprises, averaging only about two workers per enterprise. According to a 2005 survey, more than 30 percent of these enterprises rated access to

land reform involving voluntary sales of land (which could involve large fiscal costs). See World Bank (2004b).

finance as the most important overall constraint to the operation and growth of their business. Poor road infrastructure raises transport costs and reduces profitability. Lack of access to reliable electricity (half of village enterprises reported power outages of 20 days or more in a typical month) limits production or necessitates private investment in generators.

Moreover, high rates of rural-urban migration and the increasing integration of the rural and urban economies point to the importance of investment in human capital, in addition to policies addressing growth of the agricultural and rural non-farm sectors. As in most of Asia, Pakistan's economy is in the midst of a major transformation involving growing urbanization and increased linkages among rural, urban and international markets. About two-thirds of Pakistan's population lives in rural areas, where average per capita expenditures are 31 percent lower than those in urban areas (Rs 1259/month and Rs 1818/month in 2004-05, respectively). Many members of today's rural households are likely to migrate to more urbanized areas. Others that remain in rural areas will derive an increasingly large share of their incomes from employment in small towns. Investment in the human capital of these workers will not only enhance their productivity in the rural economy, but also enable them to earn higher incomes if they choose to migrate.

TOWARDS A STRATEGY FOR RURAL GROWTH AND POVERTY REDUCTION

Given the context, a comprehensive rural growth and poverty-reduction strategy is needed, with four main pillars:

- Promote efficient and sustainable **agricultural growth** to raise the incomes of small farmers and to generate growth linkages in the rural non-farm economy
- Create an enabling environment for the **rural non-farm sector** to enhance employment and incomes, and improve **rural public service delivery** in infrastructure, health and education to serve as a foundation for growth and to increase household welfare
- Enhance the **effectiveness and governance of rural institutions** through decentralization and strengthen local demand for enhanced accountability through more proactive use of public-private partnership
- **Empower the poor** and protect the most vulnerable through social mobilization, safety nets and by facilitating access to productive assets for income-generating activities.

PROMOTING EFFICIENT AND SUSTAINABLE AGRICULTURAL GROWTH

Agricultural growth has historically played a major role in Pakistan's development and continues to be crucial for overall growth and poverty reduction. Investments in large-scale surface irrigation in the 19th century, the Indus Waters Treaty agreed in 1960, and subsequent major investments in the Tarbela dam (the world's largest earth-fill dam) and link canals provided the basis for a vibrant agricultural sector and the development of the country's modern economy. Even though agriculture's share of GDP has fallen from about 40 percent in the 1960s to about 20 percent today, strong overall growth is infeasible without strong agricultural growth also. Agriculture remains the largest source of household income for 38 million Pakistanis, including 13 million of the poorest 40 percent of rural households. Substantial scope exists for increasing productivity and overall economic efficiency in the sector.

Agricultural Production and Technology

Because of constraints on arable land with access to water, crop sub-sector growth cannot take place without increases in productivity. Past investments in crop technology

(especially cereals) have had very high payoffs in South Asia in terms of poverty reduction, both by raising farmer incomes and by reducing the real prices of major staples (wheat and rice). Further investment in agricultural technology, especially for the major cereals and cotton, (crops for which Pakistan has a comparative advantage), is needed both to offset declining soil fertility in many regions and to augment productivity. Increased recourse to public-private partnerships in research and extension, an approach that has been successful in other developing countries, is one promising way to boost the effectiveness of public spending.

Achieving substantial future growth in agricultural crop incomes will also require additional diversification into higher-value crops appropriate for Pakistan's various agro-ecological regions. Substantially greater efforts are needed in agricultural research on higher value crops such as oilseeds, vegetables and fruits as well as livestock, and improvements in seed certification and quality control. Increasing the price of water rights so that they more closely reflect the opportunity costs of water also would encourage cultivation of high-value fruits and vegetables. Perhaps most importantly, formation of farmers' organizations and new forms of marketing arrangements (such as public-private partnerships and contract farming) can significantly reduce transactions costs and increase sales volumes and prices paid to farmers.

Programs to increase livestock production, especially production of dairy cattle and milk in Punjab and Sindh, and sheep and goats in NWFP and Baluchistan, could have significant direct impact on the incomes of the rural poor. Productivity gains for small-holder dairy farmers are feasible through the use of improved feeds, better veterinary services, and more efficient marketing channels to help ensure more remunerative milk prices for farmers. Multi-national firms have enjoyed some success in improving the efficiency of marketing channels, but pasteurized and UHT milk still account for only about 10 percent of total milk consumption in Pakistan; the remainder is fresh milk. Vertically integrated cooperatives such as the *Idara-e-Kissan* (Hala Dairy) that deliver both the requisite technology and veterinary and marketing services to small farmers are promising alternatives. Designing effective programs requires attention to the cultural and economic constraints facing rural women, who play a major role in the care of livestock, including the collection of fodder, cleaning of sheds and the processing of animal products.

Increasing Efficiency of Water Use

Increasing the efficiency of water use is critical for the sustainability of agriculture in Pakistan. Water remains the key resource constraint on Pakistan agriculture. Irrigation water is critical for agriculture in much of the country, and massive public investments in dams and canals in the Indus river basin, as well as mainly private investment in wells for groundwater irrigation have been essential for agricultural production. However, current patterns of water use in Pakistan are causing significant environmental degradation. Losses of soil fertility due to agricultural soil degradation (soil salinity and erosion) are estimated at Rs 70 billion per year or 1.5 percent of total GDP and 6.8 percent of agricultural GDP, according to 2004-05 GDP figures. In addition to environmental loss, inefficiency in the allocation of water within canal systems causes lower crop productivity at both the head ends of canals (due to over-use of water and water-logging) and the tail ends (due to water shortages).

Improvements in water delivery (including investments in drainage, control structures and conveyance mechanisms), **better water management** (through strengthening of water course organizations, farmers organizations, area water boards or professional canal management agencies) and **greater efficiency of water use at the farm level** (crop choice and adoption of water saving technologies) are the most promising approaches in the short to medium-term.

Irrigation Departments need to establish asset management plans that indicate measures for divestment of assets that can be turned over to the private sector or farmer organizations. Irrigation Departments also need operation and maintenance plans that include medium-term expenditure frameworks, assignment of financial responsibilities to the various actors, pricing policies and cost-recovery mechanisms. **Service delivery and allocation of water can be improved through promotion of water user associations and farmer organizations (FOs)**, as well as through improvements in the existing infrastructure. FOs could be given authority to collect and hold fees for canal water (*abiana*), as well as for operation and maintenance of distributaries and branch canals.

Financial incentives could also rationalize water use. Given that water is increasingly scarce in Pakistan, a shift from water-intensive crops like sugar cane to less water-intensive crops like oilseeds (sunflower and canola), maize, and vegetables irrigated with drip irrigation techniques, could result in large water savings, increasing water availability downstream and reducing environmental degradation. For example, shifting 60 percent of land under sugar cane cultivation to a maize-wheat rotation or converting about one-quarter of ordinary rice land to maize would save enough water to supply the current water needs of Karachi.

Charges for canal water (*abiana*) should be revised to better reflect opportunity costs of water use. *Abiana* can be used to incentivize farmers to diversify to higher value crops. However, to minimize problems of non-payment, fee increases must be accompanied by improvements in service delivery. Raising water charges to levels approximating the opportunity cost of water is likely to be politically infeasible, however. An alternative would be the development of markets for tradable water rights such as exists in Chile and Mexico. This would require laws establishing tradable water rates and the strengthening of local institutions to enable these to serve as brokers in water markets. Projects and programs involving agricultural extension, technical assistance, market development and credit may be needed to ease the transition of farmers and processors to alternative crops and products.

Agricultural Markets and Trade Policies

Direct government involvement in markets through domestic purchases and sales has declined since its peak in the 1970s and 1980s. Interventions in sugar cane and rice markets have ceased, but in recent years provincial and federal agencies have intervened in cotton and wheat markets. These interventions, which typically lead to large financial losses and discourage private sector investment in storage and trade, should be, if possible, phased out. Promotion of farmer associations to increase farmer's market power, particularly for production of highly perishable fruits, vegetables and dairy products, can improve producer prices and volumes sold.

Several steps can be taken to improve market efficiency and reduce the fiscal burden associated with government intervention in wheat markets. International experience suggests that the main objectives of Pakistan's wheat policy—to secure the provision of adequate supplies of wheat flour for consumers at affordable market prices and to maintain prices paid to producers at sufficiently high levels to ensure domestic production and real incomes for wheat farmers—can be achieved more efficiently through greater reliance on market mechanisms. The federal government has actively promoted liberalization of wheat markets in recent years by advocating avoidance of domestic marketing and storage restrictions and promoting a liberalized import policy. Significantly lower volumes of public procurement by provincial food departments and PASSCO would immediately reduce subsidies and increase the private sector's market share. Increased transparency and consistency in the implementation of these policies could increase price stability and enhance food security in Pakistan.

Faster growth in Pakistan’s exports of non-traditional agricultural products (fruits and vegetables, meat, fish) will require improved capacity to meet Sanitary and Phyto-sanitary (SPS) standards imposed by importing countries. Pakistan presently lacks a coherent strategy (or framework of strategies) for quality and SPS management in relation to its trade. Organizationally, there is a need to consolidate and enhance the fragmented, isolated, and non-coordinated capacity of SPS management institutions and regulations. This can be achieved by better defining the roles and responsibilities of the various agencies involved in SPS management, strengthening technical capacity for risk assessment, and re-institutionalizing early warning and surveillance systems for pests, diseases and contaminants.

Trade policies and governance issues that reduce efficiency of supply chains for processing, transport and commercialization of high-value agricultural products also need to be addressed. These issues are particularly important for products destined for highly competitive international markets. For example, import tariffs on cold and sanitary packaging materials inflate processing costs of milk and milk powder. Similarly, governance problems related to clearance of goods at customs and ports add to costs for export goods. And unofficial payments for security protection add to marketing costs for both domestic and internationally traded goods.

CREATING AN ENABLING ENVIRONMENT FOR THE RURAL NON-FARM SECTOR AND IMPROVING PUBLIC SERVICE DELIVERY

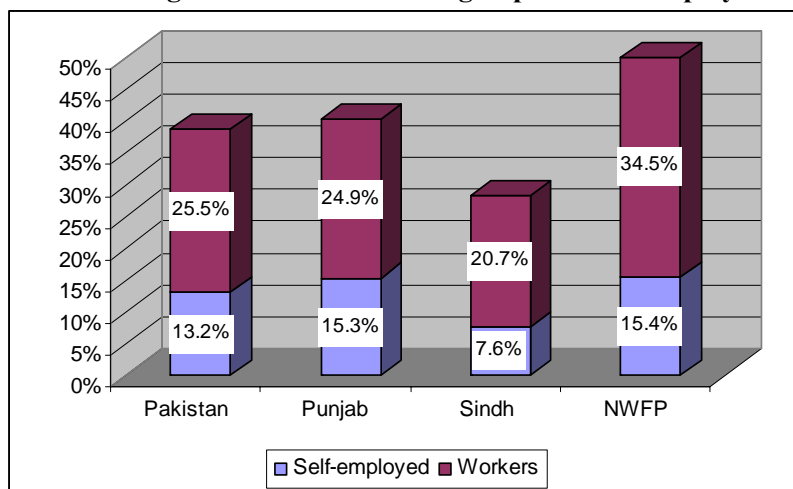
Although agricultural growth remains an important pathway out of poverty in rural Pakistan, particularly for the 40 percent of Pakistan’s poor who are farmers, 45 percent of the rural poor rely on non-farm activities as their main source of income. Poor farmers also derive about half of their total incomes from non-farm activities. Moreover, nearly 40 percent of the labor force of rural Pakistan is employed in non-farm sectors, either in self-employment (26 percent) or wage workers (13 percent). For these reasons, a well developed and functioning rural non-farm sector is essential to generate employment, ensure income diversification and reduce poverty. Achieving this will require substantial improvements in rural service delivery, particularly for investments in rural and small-town infrastructure. Greater investments in health and education are also required to both improve living standards today and to build human capital for the future.

Enhancing Access to Credit

A number of successful financial-sector reforms have been implemented in recent years, but rural and small town non-farm enterprises, which primarily tend to be micro enterprises involved in trade and services (about 60 and 30 percent of enterprises, respectively), still lack access to formal credit. Survey results indicate that access to credit is a major constraint and that many firms seeking credit are unable to get it. Potential suppliers of credit are often reluctant to lend to rural and small-town businesses because of high transaction costs and perceived high risks. Various measures are needed to increase the flow of credit and spur investment and growth. Among these:

- Develop alternative forms of collateral acceptable to banks
- Make procedures for loan applications less cumbersome
- Provide practical training for entrepreneurs in accounting and preparation of business plans to improve their ability to signal credit-worthiness to financial institutions

Figure 4: Percentage of the Rural Working Population* Employed in Non-farm Sectors



Source: PSLM 2004-05.

Notes: *Active labor force, aged 10 years and above.

- Organize potential borrowers in groups or professional associations to reduce risks and transaction costs for lenders
- Strengthen the institutional and regulatory framework for the enforcement of contracts, arbitration and conflict resolution

Facilitating Linkages to Input and Sales Markets

Market linkages could be facilitated by supporting the creation and development of more effective local business associations or organizations. These organizations could arrange product fairs, help develop business directories, and provide information services and details on how to undertake market research. They could also share information on prices, quality standards and how to access technical, financial and organizational services for greater value addition. Facilitating group marketing and business clusters could also help rural enterprises take advantage of scale economies, thereby allowing them to purchase inputs at lower prices, access larger markets and share the use of equipment and infrastructure.

Improving Public-service Delivery

Because spending on rural public service delivery is highly fragmented, with major components allocated across the various levels of government, a concerted effort is needed to coordinate government's rural development efforts. Addressing the major infrastructure constraints (e.g. roads and electricity) that hinder growth of the rural non-farm sector will require greater flow of resources to local governments and increased efficiency of public current and development spending. Improvements in public-service delivery in health, education, water supply and sanitation also are needed to enhance welfare of the poor and build human capital for future income growth. Given that there is no longer a formal administrative difference between rural and urban areas in Pakistan, there is no mechanism to track spending in rural areas apart from information on agriculture spending. Accurate monitoring of total spending in rural areas is needed to ensure that rural development needs are addressed and impact measured.

Provision of infrastructure, particularly roads and reliable electricity, can reduce operating and marketing costs, making investments in enterprises in rural areas and small towns more profitable. Access to electricity remains a major challenge in many villages and

small towns, and even among enterprises with access, reliability of supply is uncertain. The median number of days with power outages in a typical month was reported as 20 days in villages and 15 days in small towns. Access to and use of telecommunications among enterprises is also surprisingly limited. Only 31 percent of entrepreneurs in small towns (9 percent in villages) owned fixed line phones or cellular phones. Needed measures include:

- Better road maintenance and extension of basic motorable access;
- Improved institutional arrangements for ownership, management and financing of the rural transport system in accordance with the realities of devolution;
- Promoting greater community involvement in planning and managing transport infrastructure improvements to ensure that infrastructure meets local needs.
- Increased investments in power distribution and transmission, together with accelerating key reforms in the energy sector.

Increased public expenditures are particularly important in health, education and population. In spite of improvements since 2001-02, Pakistan's expenditure and outcome in health and education remain low by comparison with other south Asian countries. These sectors also appear to be under-funded relative to other public expenditures that are less pro-poor.

- Substantial investments in education, including vocational training programs and programs targeted to women, are needed to increase human capital and income-earning potential, so as to break the inter-generational poverty trap.
- Measures to promote slower population growth are also a high priority because of the direct impact smaller family size exerts on per capita household incomes.

IMPROVING THE EFFECTIVENESS AND GOVERNANCE OF RURAL INSTITUTIONS

Pakistan needs to review the role of its public institutions to change a control-oriented, supply-driven system to one that is more decentralized, efficient and demand-driven. The devolution that occurred in 2002 was an important step, but much remains to be done to reap the benefits of devolution, including improving administrative capacity of local government and further strengthening of Citizen Community Boards (CCBs). Greater interaction with private-sector groups of farmers and enterprises through public-private partnerships could facilitate government responsiveness and improve efficiency of investments and programs. In addition, measures that improve governance and accountability such as stricter enforcement of laws, legal reforms and wider dissemination of information on spending and effectiveness of programs can help spur both greater efficiency of government, as well as growth and investment in the private sector.

Reaping the Benefits of Devolution

Fiscal resources for rural development should be increased, particularly at local government (districts, *tehsils* and unions) level and efficiency of spending enhanced.

- These flows should be monitored closely and renewed efforts should be made to ensure that resources reach local governments in these provinces.
- In order to strengthen the local government planning process and the transparency of resource allocation, discretionary transfers' share of total transfers should be reduced and provincial non-discretionary transfers to local governments should increase more quickly than local government wage bills.
- Special attention should be given to monitoring public service delivery in rural areas.

1. **Five years after devolution, there is still confusion regarding the roles and responsibilities of the various levels of government, as well as apparent jurisdictional overlaps.** Immediate steps should be taken to begin to alleviate these administrative constraints and improve the efficiency of spending.

- New staff should be hired and practical training provided, particularly at the Tehsil Municipal Authority level.
- Jurisdictional overlaps should be reviewed and corrected following a systematic assessment of administrative responsibilities at the various levels of local government
- The transfer of resources through vertical programs and other higher-level government programs should be discouraged and reduced, with particular attention to the water and sanitation sector, which currently receives substantial transfers through Members of the National Assembly (MNAs), Members of Provincial Assemblies (MPAs) and directives of the Chief Minister.

The delegation of power to local governments through devolution has brought decision making closer to the communities, enabling them to access government officials and this has led to some improvements in service delivery. Survey evidence suggests that citizens' degree of access to their representatives has increased considerably and problems are solved relatively quickly under the new system. Priorities of the local communities are also increasingly reflected in development schemes. The effective participation of communities could be increased further, however, through:

- Widely disseminating user-friendly guidelines for CCB processes
- Developing training programs for councilors to improve their awareness and ensuring implementation of the Local Government Ordinance (LGO) provisions for CCB funding

Reforming Institutions for Agricultural Development

Irrigation, agricultural research and agricultural extension institutions also need to be made more accountable to farmers.

Reforms of irrigation departments are needed to increase accountability, efficiency, transparency and competition in surface water supply. Key steps include:

- Unbundling the business into bulk (operation of dams and barrages), transmission (canal management) and distribution (management of tertiary systems through water users' associations) components, with relations among the parts governed by contracts
- Encouraging private-sector involvement in management of canals and promoting competition between the irrigation departments and private service providers at the distributary level

Effectiveness of agricultural research at the provincial level could be enhanced by:

- Creating autonomous research organizations with the ability to attract qualified scientists and with adequate administrative and managerial flexibility
- Tailoring research agendas to the needs of individual provinces, particularly regarding soil fertility, water-logging and development of new varieties and products that meet market demand
- Forging partnerships with the private sector and knowledge institutions to develop new technologies, as well as to disseminate and transfer these on a large scale.

Decentralization of agriculture to the district level has been implemented without the necessary measures to ensure adequate capacity and funding. Programs to promote agricultural production can be made more effective by:

- Increasing the capacity of district governments to set priorities and develop implementation strategies
- Strengthening the link between district and provincial agriculture departments to ensure consistency of design and implementation of agricultural programs and policies
- Increasing the amount of funds allocated for agriculture at the district level.

Public-Private Partnerships

Public-private partnerships (PPPs) should be pursued aggressively with respect to agricultural marketing, research and extension, health, education, infrastructure and other sectors to enhance productivity of public-sector programs. It will be necessary to:

- Put in place an incentive structure for the private sector to enter into contractual arrangements with farmer organizations and link delivery of public services to business development
- Create public-private partnerships in agricultural research and extension to help public research systems become more responsive to farmers' actual needs
- Strengthen recent government education-sector reforms that enable engagement with private and NGO schools to improve access and quality of education, including government-supported per child subsidies
- Increase government financial support for NGOs, including Rural Support Programmes (RSPs) that deliver micro-credit, skills training and other private services.

Governance and Accountability

Improving governance is crucial for reducing poverty and promoting growth in both the farm and non-farm sector. Governance issues, including political instability, corruption, insecurity and lingering conflict, are a major bar to investment, economic growth and efforts to reduce poverty. Bureaucracies with low levels of accountability to stakeholders tend toward inefficiency and inability to deliver rural services, including agricultural and livestock research, extension, irrigation, natural-resource management, and market support services. To address these issues, the Government of Pakistan should strengthen recently begun efforts to: i) reform government institutions that oversee economic and financial management, the police, the judicial system, and the civil service; (ii) improve public financial management, accountability, and increased transparency and information on government activities to facilitate public oversight; (iii) strengthen local government institutions; (iv) privatize and deregulate public enterprises to reduce opportunities for rent-seeking behavior.

Improving the mechanisms for contract enforcement, promoting transparency in the legal system and allowing non-farm enterprises a greater say in policy making would help spur rural and small-town enterprise growth. Further, improved mechanisms for contract enforcement would also facilitate market linkages by enabling smaller enterprises to enter into sub-contracting arrangements with larger firms and thereby gain access to larger markets.

All rural development efforts could be improved through enhanced monitoring and evaluation. Adopting a national, results-based management framework is a crucial step to ensure effective use of resources.

- Both projects and larger programs should establish indicators at the outset, carry out simple baseline assessments and monitor indicators against targets.
- Improvements in collection of basic data are also needed. In particular, data on wage rates in small towns and rural areas should be collected to help monitor labor-earnings trends in the agricultural and rural non-farm sectors.

Publishing local, provincial and federal government plans and financial reports would improve access to information and make the local government system more transparent and accountable.

EMPOWERING THE POOR AND PROTECTING THE MOST VULNERABLE

Increasing the flow of resources to local governments and improving administrative procedures address mainly the **supply of public services**. However, a major reason for the limited impact of rural development efforts in Pakistan and many other countries is a lack of participation and influence by rural poor households, which **limits effective demand for public services** and hampers efficiency in development programs. Social mobilization can empower the poor, enabling them to play a greater role in the development process, not only to improve delivery of public services, but also to increase their market power by building so-called voice and scale in the farm and non-farm sectors (farmer organizations, water users, self help groups). Finally, although inclusive economic growth should be the main mechanism for reducing poverty, increased efforts toward social protection are needed to protect the most vulnerable.

Social Mobilization

Too often, a top-down approach is implemented – one that sees the rural poor simply as beneficiaries of public programs supplied by the government. Instead, a development paradigm is needed that puts the household and its community at the origin of development initiatives. Empowering the rural poor to take on this role, however, requires social mobilization, a central pillar of the government's Mid-Term Development Framework (MTDF), which covers 2005-2010 and a key feature of the Rural Support Programmes (RSPs). Community Boards (CCBs) are also the product of social mobilization, although these have a more limited focus on development projects implemented through local governments.

Social mobilization, along with economic empowerment and eventual graduation of groups, should be at the core of the rural livelihood development strategy. The benefits of broad economic growth trickle down very slowly when the poor have little access to key physical, social and financial endowments. To overcome highly unequal distribution of these and to achieve rapid pro-poor growth, poor people need new opportunities to organize, generate business and link with mainstream development activities.

- Social mobilization, as a way to develop institutions **OF** the poor as opposed to institutions **FOR** the poor, is a central component of effective rural livelihood development. Mobilizing poor people provides them with a voice and the scale required to more effectively engage with the range of institutions and individuals providing public and private services.

- Economic empowerment, whether through micro-credit, grants or skills training, facilitates access to assets, increases incomes, and demonstrates the creditworthiness of individuals and groups.
- Ultimately these groups may graduate to form other federative and associative movements involved in income-earning activities including public-private partnerships, various types of franchising and contract farming arrangements. These movements can provide the organization and critical mass needed to reduce transaction costs and leverage private sector and financial services.

To strengthen and expand these and other efforts at social mobilization, the government could:

- Initiate a social mobilization program aimed at building social capital and promoting organizations and institutions of the poor
- Facilitate access to productive assets by poor people through a matching grant window or the establishment of revolving funds at the community level
- Include social mobilization components in the design and implementation of rural development programs

Micro-Finance

In addition to social mobilization efforts, microfinance programs can empower the poor by alleviating severe credit constraints that limit their incomes and increase their vulnerability to adverse shocks. Major microfinance programs exist that are run by NGOs in rural areas, such as the Pakistan Poverty Alleviation Fund (PPAF), already exist, though coverage in Pakistan is smaller than in other south Asian countries. Pakistan’s microfinance programs may improve their effectiveness through adoption of the following international best practices:

- Focus on savings and the efficiency of savings services, as savings may be even more important for the poor than credit and micro-credit without savings institutions may not be sustainable
- Organize the demand side and help poor communities demonstrate their creditworthiness
- Continually assess product demand to design saving and lending products to meet that demand (informal lenders, and even the staff of credit institutions themselves, have been able to develop suitable products);
- Increase lending to women’s groups (the majority of sustainable successes worldwide have been with women) through socially acceptable mechanisms suited to specific localities;
- Find efficient ways of linking local informal rural finance institutions to formal institutions.

Social Protection

Safety nets for both the rural and urban poor should be made more efficient and scaled up to cover all ultra-poor and some poor households (4-11 million households).

- Cash transfer programs such as the Food Support Program (FSP) can be scaled up and the scope of these programs expanded to encourage long-term human-capital investments among the poor; one example is the Child Support Program pilot.
- Nutritional interventions aimed at improving health and nutrition of women and infants, such as The Tawana Pakistan school feeding program should be, as needed, redesigned or piloted and scaled up.

- The government should also consider piloting a major rural workfare program to provide temporary employment for vulnerable households.

Programs are also needed to address the problems of heavily-indebted workers subject to forced labor of various types, such as landless sharecroppers in rural southern Punjab and northern Sindh, and brick kiln workers. Possible interventions include:

- Increase public awareness of unfair labor practice issues through seminars and the media
- Strengthen enforcement of existing laws
- Launch a pilot project to provide access to credit and alternative income sources for these groups

CONCLUSIONS

Rural growth is crucial to Pakistan's future. Two-thirds of the country's population and 80 percent of the poor live in rural areas; unless there is sustained progress in these areas, rapid overall economic growth and poverty reduction are impossible. Stagnation of the rural economy could also threaten the social cohesion of the country, drive massive migration to urban areas, and result in massive urban unemployment. Achieving rapid rural growth and poverty reduction, however, requires overcoming major constraints related to unequal distribution of land and access to water, low productivity of crop agriculture, inadequate infrastructure, ineffective public-service delivery, and insufficient participation by rural people in most public-sector development programs.

Nonetheless, Pakistan has made important strides in the last several years to promote rural growth and poverty reduction. There has been substantial progress in liberalizing agricultural markets, promoting diversification and exports, and increasing expenditure on infrastructure and public services in rural areas. Progress has also been made in empowering the poor through social mobilization (RSPs and CCBs) and micro-credit (the PPAF). These efforts should be continued and strengthened. In addition, rapid and sustained reduction of rural poverty will require an even greater focus on building human capital, through improved delivery of health services and sanitation, basic education and appropriate technical training.

Going forward, it is crucial to maintain a multi-faceted and holistic approach to rural development and poverty reduction and to ensure that sufficient resources are invested in this task. Efficient and sustainable agricultural growth is a necessary condition for robust rural economic growth, but in itself cannot be expected to drive substantial reductions in rural poverty given the unequal distribution of access to land and water resources in Pakistan. Thus, policies to promote agricultural growth must be complemented by investments and policies that create an enabling environment for the rural non-farm sector, including increased public investment in rural and small-town infrastructure. Finally, because the ultimate objective of a poverty-reduction strategy is to increase the welfare of the poor, health and education programs that increase the human capital of the rural poor, social mobilization that empowers the poor in their interactions with government and markets and social protection programs that protect the most vulnerable should all receive increased resources and attention.

1. INTRODUCTION

After a decade of moderate growth but little or no long-term change in rural poverty in Pakistan, agricultural output, rural incomes, rural poverty and social welfare indicators all showed marked improvements between 2001-02 and 2004-05. Real agricultural GDP per capita rose by 7.4 percent, average per capita rural expenditures rose by 5.9 percent, and the per capita expenditures of the poorest two quintiles of the rural population rose by 3.1 percent. Rural poverty declined from 39.1 percent to 34.0 percent according to World Bank estimates. Other rural welfare indicators improved even more dramatically. Child immunization rates rose by 26 percentage points, from 46 percent to 72 percent; net primary school enrollment rose by 10 percentage points, from 38 percent to 48 percent; and access to tap water in the home rose by 13 percentage points, from 10 percent to 23 percent.

These impressive achievements notwithstanding, there is little reason for complacency. Not all improvements are the result of government policies or sustainable increases in private-sector productivity. Impressive gains in agricultural output and real incomes of the rural poor relative to 2001-02 reflect in part low output and incomes in that year due to drought and other adverse shocks. Longer term, the agricultural GDP per capita growth rate (1999-2000 to 2004-05) was only 0.3 percent per year. Rural poverty rates in 2004-05 remain at a similar level to those of the 1990s. And social welfare indicators in Pakistan are still significantly below those of other south Asian countries. Moreover, problems related to timing and availability of water for irrigation, inadequate rural infrastructure, a skewed distribution of assets, and low levels of health and education continue to hamper the progress of economic growth and poverty reduction.

Pakistan's Poverty Reduction Strategy Paper (PRSP), which was written in 2003, recognizes the importance of reducing rural poverty as part of the country's overall poverty reduction efforts. The PRSP gives a key role to the rural sector in accelerating growth and reducing rural poverty, placing major emphasis on employment-generating growth in agriculture and other sectors. However, it lacks an explicit integrated rural-development strategy that covers all major aspects of the rural economy, including agricultural production and markets, input markets (seeds, fertilizer, extension), factor markets (land, water, labor and credit), the rural non-farm sector, targeted interventions, and perhaps most important, how local governments and communities can more effectively deliver basic rural services and strengthen the rural investment climate.

This report is designed to help fill these gaps through analysis of the major constraints to rural income growth and poverty reduction in Pakistan and by offering specific policy recommendations for achieving these objectives. Although much of the report's focus is on agriculture, which is at the core of Pakistan's rural economy, the rural non-farm economy is also examined at length, as are government and non-government policies and programs related to rural service delivery, social mobilization and safety nets.

Background: Rural Poverty and Economic Growth in Pakistan

About two-thirds of Pakistan's population and almost 80 percent of the country's poor live in rural areas. According to the 1998 census, 89.3 million people lived in rural areas of Pakistan

in that year.² Household incomes are lower and poverty rates are higher in rural areas than in urban areas. Average per capita expenditures of rural households in 2004-2005 were 31 percent lower than those of urban households (Rs 1259/month and Rs 1818/month, respectively). The poverty rate in rural areas is estimated at 34.0 percent, about 15 percentage points higher than the 19.1 rate in urban areas (World Bank 2006b).

Rural, as well as total population growth rates are declining, which bodes well for future per capita income growth. Average fertility rates (the average number of births per woman over her lifespan) have declined sharply since the mid-1980s from about 6.8 children per woman to 4.1 in 2001, although this is still high compared to that of Bangladesh (3.3) and India (3.2). Rural population growth rates have also fallen from 3.5 to 2.6 percent. Nonetheless, the rural population is likely to continue to grow, reaching 122 million in 2015 (64 percent of the total population) at historic rates of migration of 1.2 percent per year. The urban population would reach 70 million in this scenario, and 82 million (43 percent of the population) if net migration rates doubled to 2.4 percent per year (See the Annex to Chapter one).

During the 1970s and 1980s, agricultural growth was accompanied by substantial reductions in rural poverty, but rural poverty rates in Pakistan did not decline in the 1990s despite substantial growth in agricultural GDP. Even though real agricultural GDP rose by 4.6 percent per annum, the percentage of the rural population living below the poverty line remained essentially unchanged between 1990-91 (36.9 percent) and 1998-99 (33.8 percent).³

Several factors explain the non-correlation between relatively rapid agricultural growth and rural poverty reduction, including a possible overestimate of agricultural GDP growth and an increase in real consumer prices of major staples since the mid-1990s. In addition, because of the skewed structure of ownership and access to factors of production in rural Pakistan, 46 percent of the rural poor in non-farm households do not share directly in incomes derived from agricultural crop production. Moreover, even accounting for growth linkage, effects from increases in traditional crop agriculture are relatively small in comparison with the sector's large size.

Positive developments in agricultural output, rural poverty reduction and social welfare indicators in 2004-05 represent a sharp break with 1990s trends. These improvements have been achieved through a combination of increased overall development expenditures and improved service delivery at the local level (in some localities at least), supported by a sound macro-economic environment including a liberalized trade and exchange-rate policy regime with relatively low inflation. The latter in turn spurred high GDP growth and increased demand for construction and other labor-intensive services. Factors that are likely to be more transitory also played a role, including increased increases in workers' remittances and bumper crops related to good weather.⁴

The challenge now will be to extend the success of recent years to the medium term so as to further reduce still-high rates of rural poverty in Pakistan. The strategies adopted to achieve these goals will need to take into account gradual, but increasingly important long-term changes

² "Rural" here is defined according to administrative definitions at the time of the 1998 census. Since the 2002 devolution, there has been no formal administrative distinction between urban and rural areas.

³ Official government estimates show poverty at 35.9 percent in 1998-99 (Pakistan Economic Survey, 2005-06). Poverty estimates vary, however, because of changes in definitions of poverty lines over time and methodological issues related to price deflators. See Chapter 2.

⁴ Though levels of remittances and crop yields may be maintained, growth rates are likely to fall.

in Pakistan's economy, particularly rural-urban migration, a declining share of agriculture in total economic output and increasingly severe environmental constraints (particularly related to growing water demand in urban areas and environmental degradation due to drainage problems).

Most importantly, a rural poverty-reduction strategy should focus not on rural sectors, but on rural people. Many of today's rural poor may migrate to small towns and large cities or be employed outside of rural areas for all or part of the year. Because of this, reducing rural poverty rates will not be merely a function of agricultural and rural non-farm growth, but also of development in urban areas (including small towns) and overall economic growth. Investment in rural and small-town infrastructure can facilitate these economic linkages. Likewise, investments in human capital (education and health) can increase the productivity and welfare of the rural poor irrespective of whether they remain in rural areas or not.

PLAN OF THE REPORT

The analysis begins with a detailed examination of recent trends in poverty and rural incomes and determinants of rural incomes, as well as an overview of changes to non-monetary measures of welfare. The focus of this analysis is not on estimates of poverty and rural incomes, per se, but on their determinants, so as to better understand the effects of agricultural growth, growth in other sources of income, and public investments in the welfare of the poor.

Chapters three and four discuss programs and policies for spurring growth in the agricultural and rural non-farm sectors, respectively. Chapter three examines the structure and constraints to growth of Pakistan's agricultural sector that remain at the heart of the rural economy in spite of that sector's declining share in the overall economy. This chapter includes an assessment of water, the key resource constraint in agriculture, measures to increase agricultural productivity and crop diversification, the importance of the livestock sector, agricultural markets and implications for Pakistan's agricultural trade and pricing policies. Chapter four highlights the importance of spurring the rural non-farm sector through more than agricultural growth linkages in order to accelerate reduction of rural poverty. The results of a survey of rural non-farm enterprises undertaken in 2005 follow, along with an analysis of constraints to growth of the rural non-farm sector. The chapter concludes with suggestions on policy measures to overcome these constraints.

Chapter five examines rural service delivery in Pakistan, beginning with a study of fiscal flows among federal, provincial and local levels of government since the 2002 devolution. Subsequently, the results are presented of a 2006 survey on rural public-service delivery in 7 districts and 14 *tehsils*, along with recommendations for enhancing community participation and program effectiveness. Chapter six covers government and NGO initiatives aimed at social mobilization and enhancing rural livelihoods, including an overview of the major programs in Pakistan and lessons learned from the experiences of other developing countries in social mobilization and microfinance. Chapter six also highlights the role of other direct interventions to improve the welfare of the poor, including safety nets and programs targeted to disadvantaged groups, particularly heavily indebted laborers. Chapter seven offers a summary of the main findings and policy recommendations of the study, including a rural development strategy comprised of four main pillars: i) promoting efficient and sustainable agricultural growth; ii) creating an enabling environment for the rural non-farm sector and improving rural public-service delivery; iii) improving the effectiveness and governance of rural institutions; and iv) empowering the poor and protecting the most vulnerable.

ANNEX TO CHAPTER 1: POPULATION GROWTH IN PAKISTAN

Available evidence suggests that average fertility rates (average number of births per woman over her lifespan) in Pakistan were stable but remained high until the mid-1980s, but have since declined sharply. Feeney and Alam (2003) show that the average total fertility rate as derived from various population surveys in Pakistan was essentially constant at 6.8 children per woman from 1960 through the mid-1980s. Data from the annual Pakistan Demographic Surveys (PDS), which were begun in 1984, show a sharp decline in fertility (at a rate of 1.8 children per woman per decade) from 6.9 children per woman in 1987 to 4.3 in 2000, and 4.1 in 2001 (PDS 2001). Nonetheless, this figure is high compared to those of Bangladesh (3.3), India (3.2), Iran (2.6) and Sri Lanka (2.1).⁵

Population growth rates have also declined since the early 1990s, which bodes well for future per capita income growth. Official estimates of population from the four national population censuses (1961, 1972, 1981 and 1998) suggest a decline in population growth rates from 3.62 to 3.01 to 2.65 over the inter-census periods. Feeney and Alam (2003), however, use projections of population growth based on fertility and life expectancy data to argue that the censuses of 1972 and 1981 overstated the population relative to the 1961 and 1998 censuses. Their population projections suggest that population growth rates actually increased from 2.6 percent in 1961-65 to 3.5 percent in 1986-90 before falling to 3.0 percent in 1991-95 and then 2.6 percent in 1996-2001.⁶

The implication of these alternative estimates which adjust population growth downward prior to the mid-1980s and upward thereafter is that **per capita agricultural growth in the 1980s and 1990s was substantially less than indicated by the official data**. Real agricultural GDP growth per capita in the 1980-90 period is thus only 0.6 percent, instead of 1.3 percent; for the 1990s, the adjusted growth rate is 1.6 percent, as compared to the official figure of 1.9 percent (Table A1.1). Slower than reported agricultural growth rates per capita are another contributing factor to the rural poverty puzzle of the 1980s and 1990s in which there is a non-correlation between agricultural growth and rural poverty reduction.

Table A1.1. Estimates of Agricultural Growth Per Capita in Pakistan, 1960-2004

	1960-70	1970-80	1980-90	1990-00	1990-2004
Real GDP growth	7.19%	4.71%	6.32%	3.75%	3.62%
Real agricultural GDP growth	4.89%	2.33%	4.04%	4.42%	3.54%
Population growth (official)	2.79%	3.18%	2.70%	2.49%	2.47%
Rural population growth (official)	2.42%	2.73%	2.34%	2.11%	2.06%
Population growth (Feeney and Alam, 2003)	2.68%	3.12%	3.48%	2.74%	2.52%
Real agricultural GDP growth per capita (official)	2.04%	-0.82%	1.31%	1.88%	1.04%
Real agricultural GDP growth per capita (adjusted)	2.16%	-0.76%	0.55%	1.63%	0.99%
Difference in growth rates (adjusted less official)	0.11%	0.06%	-0.76%	-0.25%	-0.05%

Source: Pakistan Economic Survey (various years), authors' calculations.

Notes: Adjusted per capita agricultural GDP growth uses population figures from Feeney and Alam (2003).

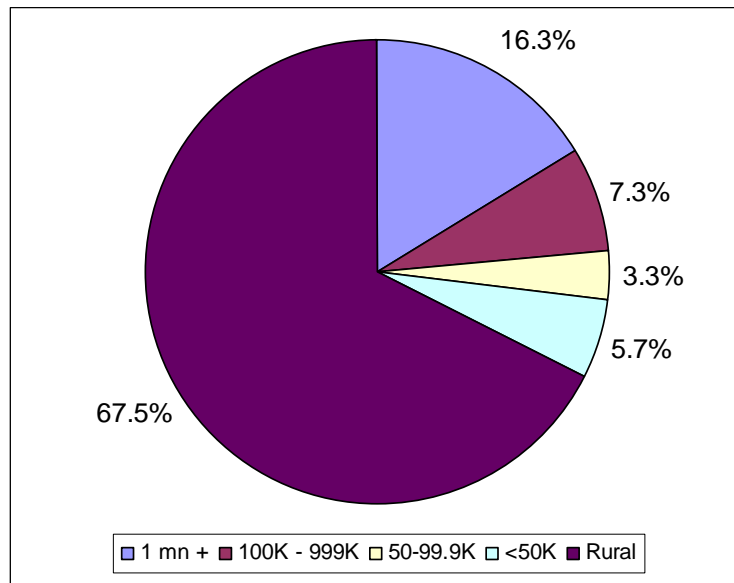
⁵ 2001 World Population data sheet, Population Reference Bureau, Washington DC. Quoted in Pakistan Demographic Survey 2001).

⁶ Note that analysis based on fertility and mortality rates provides a consistency check on population growth rates, but not levels. Data from a future population census may resolve the issue (Feeney and Alam 2003, p. 83).

Urban and Rural Population Growth

Pakistan's population remains predominantly rural, with half of the urban population concentrated in the six largest cities. Interpretation of census data on urban and rural population levels and growth are complicated by changes in the definition of urban in the various censuses. In the 1981 and 1998 censuses, urban areas were defined according to an administrative definition (municipal corporations, town committees and cantonments), as opposed to the population-based definition used in earlier censuses.⁷ Using the former definition, Pakistan's population was 32.5 percent urban in 1998. About one-sixth of the population (16.3 percent) lived in cities of more than one million people: Karachi (9.339 million), Lahore (5.443 million), Faisalabad (2.009 million), Rawalpindi (1.970 million), Multan (1.410 million) and Hyderabad (1.167). Another 7.3 percent of the population lived in the 43 cities with populations of 100,000 people or more. Only 4.3 and 7.5 percent of the population lived in cities of from 50 to 99.9 thousand people and urban areas with less than 50 thousand people, respectively (Figure A1.1).

Figure A1-1. 1998 Population Distribution in Pakistan by City Size (mns)



Source: Government of Pakistan 2000; The 1998 Census Report; Arif 2003.

Notes: The figure is based on a total population of 132.4 million.

Pakistan's urban population has grown significantly faster than the rural population over time, but problems with the various censuses make exact calculations for recent years difficult. Using a consistent administrative definition of urban as adopted in the 1981 and 1998 censuses, Arif (2003) estimated that the proportion of Pakistan's population living in urban areas rose from 17.4 percent in 1951 to 22.4 percent in 1961 and again to 32.5 percent in 1998. Annual growth rates of urban and rural populations over the 1961 to 1998 period were 4.13 and 2.71 percent, respectively. Unadjusted population data imply growth rates of 3.47 percent (urban) and 2.30 percent (rural) from 1981 to 1998, but because the total population in 1981 appears to be overstated relative to 1998, one or both of these growth rates is likely understated. Applying the same percentage adjustment (-9.8 percent) to both urban and rural populations for 1981 as used

⁷ The 1951, 1961 and 1972 censuses defined urban as areas with a minimum population base of 5,000 people, though exceptions were made for some localities with less than 5,000 people that had urban characteristics.

by Feeney and Alam (2003) to adjust total population, estimated urban and rural population growth rates in the 1981 to 1998 period were 4.1 percent and 2.9 percent, respectively (Table A1.2).

Table A1.2. Population and Fertility Rates in Pakistan

	1981	1998	Growth Rate 1981-98	Natural Growth Rate 1981-98	Growth due to Net Migration ^a 1981-98
Population Census Data					
Total	84.3	132.4	2.7%	2.7%	0.0%
Urban	23.8	43.0	3.5%	2.6%	0.9%
Rural	60.4	89.3	2.3%	3.0%	-0.7%
Adjusted Population Data^b					
Total	76.4	132.1	3.3%	3.3%	0.0%
Urban	21.6	42.9	4.1%	2.9%	1.2%
Rural	54.8	89.1	2.9%	3.4%	-0.5%
Fertility Rate	6.8 ^c	4.1 ^d	---	---	---

Source: Pakistan Demographic Surveys 1984-1997, 2001; Karim and Nasar 2003; Feeney and Alam 2003

Notes: ^a Natural growth rates for figures based on census data derived from Pakistan Demographic Surveys 1984-97 (Karim and Nasar, 2003), p. 172. Natural growth rates for adjusted population figures are calculated on relative natural growth rates of urban and rural populations from Karim and Nasar (2003).

^b Official census data for 1981 (and 1972) appear to be inconsistent with census data from 1961 and 1998. Adjusted population series total is projection by Feeney and Alam (2003) based on fertility rate and life expectancy estimates and 1961 and 1998 census data. Adjusted total population estimate for 1981 is 9.8 percent below the 1981 census figure; urban and rural population estimates for 1981 use the same percentage adjustment (-9.8 percent) to the 1981 census figures.

^c Adjusted average from various surveys as calculated by Feeney and Alam (2003).

^d 2001 estimate from Population and Demographic Survey, 2001.

Birth rates remain substantially higher in rural areas than in urban areas, however. Crude birth rates (the number of births per 1000 of the population) for 2001 were 29.4 in rural areas, 18 percent higher than in urban areas (25.0). General fertility rates (the number of births per 1000 of the population of women aged 15-49 years) were 131.6 in rural areas, 28 percent higher than the 103 for urban areas (Table A1.3).

Table A1.3. Birth Rates in Rural and Urban Areas in Pakistan, 2001 and 2002

	All	Urban	Rural	Rural/Urban
Crude Birth Rate				
2001	27.8	25.0	29.4	1.18
2000	29.1	25.8	31.8	1.23
General Fertility Rate				
2001	120.8	103.0	131.6	1.28
2000	127.6	108.2	144.9	1.34

Source: Pakistan Demographic Survey 2001

Notes: The crude birth rate is the number of births per 1000 total population.

The general fertility rate is the number of births per 1000 women aged 15-49 years.

Migration to urban areas accounts for an estimated one-quarter of total urban growth. Estimates by Karim and Nasar (2003) using unadjusted population census and estimated natural

population growth rates in urban and rural areas suggest that net migration added about 0.9 percent per year to urban populations, out of a total of 3.5 percent annual growth. Estimates using figures adjusted for apparent over-enumeration in the 1981 census suggest that urban net migration increased urban populations by 1.2 percent per year out of a total of 4.1 percent per year growth.

In spite of lower fertility rates and natural population growth rates in urban areas, their share of the population is likely to increase, but the absolute rural population will also increase. Assuming a decline in natural population growth rates to 2.0 and 2.3 percent for urban and rural areas, respectively over the 1998-2015 period, if urban populations continue to grow at an additional 1.2 percent per year because of net migration, total urban population growth will average 2.9 percent (Table A1.4). In this scenario, the urban population would rise by 62 percent from 42.9 million, or 33 percent of the total population, to 69.6 million (36 percent of the population). The rural population would increase by 37 percent to 121.8 million. Doubling the rate of migration to an annual 2.4 percent would raise the projected 2015 urban population to 81.5 million (43 percent of the population).

Table A1.4. Urban and Rural Population Growth Scenarios

	1998	<u>Scenario 1</u>		<u>Scenario 2</u>	
		2015	2025	2015	2025
Migration rate to urban	1.2%	1.2%	1.2%	2.4%	2.4%
Natural growth rates					
Total	3.3%	2.2%	2.2%	2.2%	2.2%
Urban	2.9%	2.0%	2.0%	2.0%	2.0%
Rural	3.4%	2.3%	2.3%	2.3%	2.3%
Population (mns)					
Total	132.1	191.3	238.0	191.3	238.0
Urban	42.9	69.6	89.2	81.5	111.8
Rural	89.1	121.8	148.8	109.9	126.2
Population share					
Urban	33%	36%	37%	43%	47%

Source: World Bank staff calculations based on Karim and Nasar 2003.

Notes: Scenario 1: Migration rate to urban: 1.2 percent (based on estimates for 1980-1998 from Karim and Nasar, 2003); Scenario 2: Migration rate to urban: 2.4 percent per year.

2. RURAL POVERTY IN PAKISTAN

POVERTY TRENDS

Rural poverty in Pakistan, which declined sharply in the 1980s, remained stubbornly high in the 1990s. In the 1980s, agricultural GDP growth averaged 3.9 percent per year, contributing to a steady decline in rural poverty from 49.3 percent in 1984-85 to 36.9 percent in 1990-91. In spite of even faster growth in agricultural real GDP in the 1990s (4.6 percent), however, rural poverty did not decline further. Rather, the percentage of people living in poverty remained essentially unchanged between 1990-91 (36.9 percent) and 1998-99 (35.9 percent).⁸ Several factors help explain rural poverty's stasis in the 1990s, among these overestimates of livestock income growth, a rise in the real consumer price of major staples, unequal distribution of returns to land and the fact that the crop sector contributed a declining share of overall GDP.⁹

Since 1998-99, real household incomes, income-based poverty indicators and agricultural output in Pakistan have fluctuated sharply, with only gradual improvement over the medium term. Recent household survey results indicate sharp reductions in rural poverty in Pakistan over the 2001-02 to 2004-05 period. Longer-term trends are less encouraging though, as these suggest no major changes in real expenditures of the poorest 40 percent of households between 1998-99 and 2004-05. Changes in agricultural output, due in large part to weather, mirror the changes in rural real incomes over the periods in question, but like real expenditures of the poor, agricultural output and incomes have increased only modestly over the entire six-year period (1998-99 to 2004-05). Non-agricultural factors, especially increases in workers' remittances have also contributed to increased rural (and national) incomes since 2001-02. In the medium term, however, econometric evidence suggests that investments in human capital and physical infrastructure have been among the most important determinants of increased real incomes in rural Pakistan.

Preliminary analysis of the 2004-05 Pakistan Social and Living Standards Measurement Survey (PSLM) data indicates that both rural and urban poverty have declined since 2001-02. Planning Commission estimates based on a poverty line of Rs 723.4 in 2001-02 suggest that national poverty fell by 10.6 percent, from 34.5 to 23.9 percent between 2001-02 and 2004-05. Their estimates of rural poverty show a decline of 11.2 percent in the same period, from 39.3 percent to 28.1 percent. World Bank estimates for the same period show smaller declines in poverty: from 34.4 to 29.2 percent (5.2 percentage points) at the national level and from 39.1 to 34.0 (5.1 percentage points) for rural households (Table 2.1). Disparities in these estimates of changes in poverty levels are mainly due to the differing inflation factors used to determine poverty lines.¹⁰

⁸ See World Bank 2002, 20; Government of Pakistan 2003; Pakistan Economic Survey 2002, 2003.

⁹ See Malik 2005; Dorosh, Niazi, and Nazli 2003.

¹⁰ The Planning Commission estimates use the Consumer Price Index to express the 2001-02 poverty line in 2004-05 prices, following the same methodology used in poverty estimates for earlier years. World Bank estimates use inflation rates calculated from price information collected as part of the PSLM survey. Differences in definitions of poverty lines in the base year and data cleaning protocols also contribute to differences in the estimates. See World Bank 2006c for details.

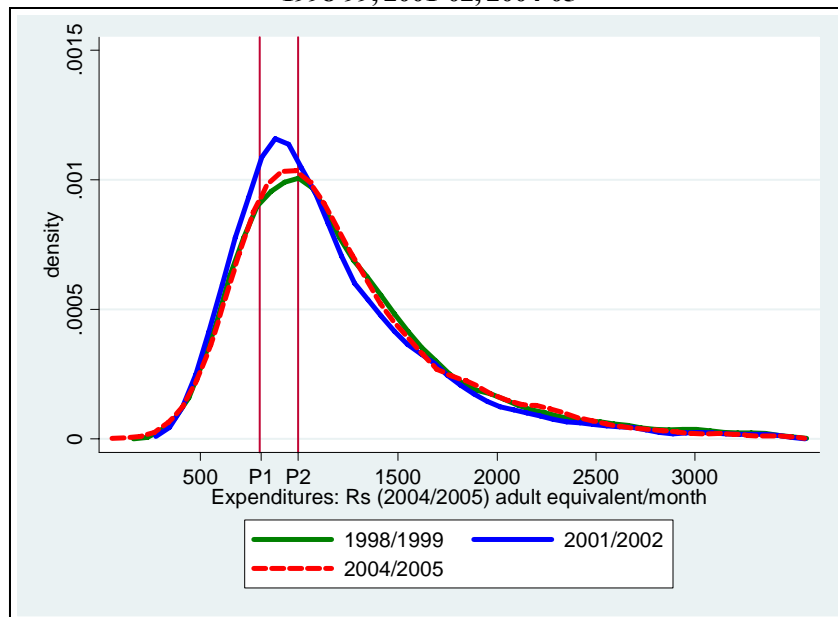
Estimates of poverty in Pakistan vary considerably depending on the methodology used, because a high percentage of rural households have per capita expenditures close to the official poverty line (Figure 2.1). 10.9 percent of rural households in 2001-02 had per capita expenditures within +/- 5 percent of the official poverty line; in 2004-05, 8.95 percent of rural households were within +/- 5 percent of the Planning Commission official poverty line (Rs 878.6). Thus, small changes in calculated real incomes (expenditures), whether due to actual changes in expenditure, price deflators or other methodological factors related to updating a poverty line, can lead to misleadingly large variations in poverty estimates. To minimize this and to avoid misunderstanding of poverty-line definitions, analysis in this chapter focuses on the bottom 40 percent of the per capita household expenditure distribution. The poor by this definition nevertheless overlap considerably with those defined as poor based on various food consumption needs-based poverty lines in Pakistan.¹¹

Table 2.1: Poverty Estimates in Pakistan, 1998-99, 2001-02 and 2004-05

		1998-99	2001-02	2004-05
Poverty	National	30.0	34.4	29.2
Headcount Rate	Urban	21.0	22.8	19.1
	Rural	33.8	39.1	34.0
Poverty Gap	National	6.3	7.0	6.1
	Urban	4.3	4.6	3.9
	Rural	7.1	8.0	7.2
Squared Poverty Gap	Nation	2.0	2.1	2.0
	Urban	1.3	1.4	1.2
	Rural	2.2	2.4	2.3

Source: World Bank staff estimates based on PIHS 1998-99, 00-01; and PSLM 2004-05, (World Bank, 2006c).

Figure 2.1: Distribution of Rural Household Expenditures in Pakistan, 1998-99, 2001-02, 2004-05



Source: HIES 1998-99, 2000-01, 2001-02; PSLM 2004-05.

Notes: P1 is the 20th percentile of 2004-05 expenditure distribution (809 Rs (2004-05)/adult equivalent/month); P2 is the 40th percentile of 2004-05 expenditure distribution (995 Rs (2004-05)/adult equivalent/month). The Planning Commission Poverty Line is 937.5 Rs (2004-05)/adult equivalent/month, 5.7 percent less than the cutoff for the 40th percentile of the 2004-05 rural expenditure distribution.

¹¹ Note, however, that focusing on the bottom 40 percent of the per capita household expenditure distribution does not eliminate the issue of the appropriate price index used in comparisons of household expenditures over time (see below).

CHANGES IN REAL INCOMES ACROSS HOUSEHOLD GROUPS

The majority of Pakistan’s rural poor are neither tenant farmers nor farm owners. Non-farm households (excluding agricultural laborer households) accounted for slightly over half (57 percent) of the rural poor in 2004-05. Farmers comprised only 35 percent of households in the bottom 40 percent of rural per capita expenditure distribution. The remainder (8 percent) were agricultural laborer households. This distribution of rural poverty closely reflects land distribution, which is highly unequal in Pakistan. According to the 2000 Agricultural Census, only 37 percent of rural households owned land, and 61 percent of land-owning households owned less than 5 acres, or 15 percent of total land. Two percent of households owned 50 acres, or 30 percent of total land.¹² Moreover, returns to land are estimated to be about half of incomes (value added) from crop agriculture, with only about five percent of value added paid to hired agricultural labor.¹³

Table 2.2. Rural Poverty across Household Groups in Pakistan, 2004-05

	Households (millions)	Expenditures (Rs/person)	Poor (L40) (percent)	Poor (L40) (millions)	Poor (L40) % of Rural Poor
Farm	5.65	1,346	27.1	1.53	34.9
Agricultural Laborers	0.72	1,028	50.3	0.36	8.2
Rural Non-Farm	6.68	1,209	37.3	2.49	56.9
Rural Self-Employed	2.22	1,244	31.2	0.69	15.8
Rural Non-Farm Other	4.46	1,190	40.3	1.80	41.1
Total Rural	13.05	1,259	33.6	4.38	100.0

Source: HIES 1998-99, 2000-01, 2001-02; PSLM 2004-05; and World Bank staff calculations.

Moreover, non-farm income is a major source of revenue, even for farmers with land. According to 2004-05 PSLM data, crop, livestock and agricultural wage labor incomes account for only 25, 8 and 4 percent respectively, of total rural incomes; non-farm incomes (40 percent), remittances (9 percent), and “other income” (15 percent) comprise the remainder. Even for farm households, crop incomes account for only about half (49 percent) of total income (Table 2.3).¹⁴ Estimates from a 2001-02 Social Accounting Matrix for Pakistan are consistent with national accounts figures for value added by sector,¹⁵ which indicates high proportions of non-farm income in total rural incomes: 36 percent for farm households and 57 percent for all rural households (Dorosh, Niazi and Nazli 2003).

Real per capita expenditures of the bottom two quintiles of rural households rose by 3.1 percent between 2001-02 and 2004-05, considerably less than the increase in per capita expenditures of rural households overall (5.9 percent) in the same period (Table 2.4).¹⁶ The

¹² The overall Gini coefficient of land ownership in 2000 in Pakistan was 0.66; including rural landless households, the Gini coefficient was 0.86. By comparison, the Gini coefficient for land ownership in India is 0.71, in Bangladesh, 0.42, and in Brazil, 0.85. See World Bank 2004b.

¹³ This estimate is from a Social Accounting Matrix for Pakistan 2001-02. See Dorosh, Niazi and Nazli 2003.

¹⁴ Unfortunately, data from the PSLM survey on land assets were not available for this report, so no analysis of income or expenditure data by farm size is possible.

¹⁵ Note that PSLM 2004-05 income data show substantially lower earnings from livestock relative to crop agriculture than do the national accounts.

¹⁶ It should be emphasized that the bottom two quintiles of the per capita expenditure distribution do not comprise the same households in the two surveys, because many households likely moved into or out of the bottom two quintiles during the period in question.

largest gains in real per capita expenditures (8.7 percent) were achieved by the richest quintile (the top 20 percent of the household distribution); the poorest quintile saw the smallest gains (1.5 percent). Among the rural poor (the bottom two quintiles of the rural per capita expenditure distribution), the real expenditure of non-farm households rose by nearly twice as much as those of rural farm households (3.6 percent versus 2.3 percent).

However, comparing 2004-05 per capita expenditures with those of 1998-99, there was almost no change (only -0.2 percent) in real expenditures per capita of households of the poorest 40 percent of households. In other words, the gain in real per capita expenditures for the poorest 40 percent in the second period simply offset the loss in real per capita expenditures incurred in the first period. The same overall pattern holds for rural farmers and non-farmers (Figures 2.2 and 2.3). In contrast, the top 10 percent of farmers (in terms of gross crop income) gained 6.9 percent from 1998-99 to 2004-05; rural agricultural labor households suffered a 4.6 percent decline in the same period.

Figure 2.2. Real Per Capita Rural Household Expenditures in Pakistan, 1998-99 to 2004-05

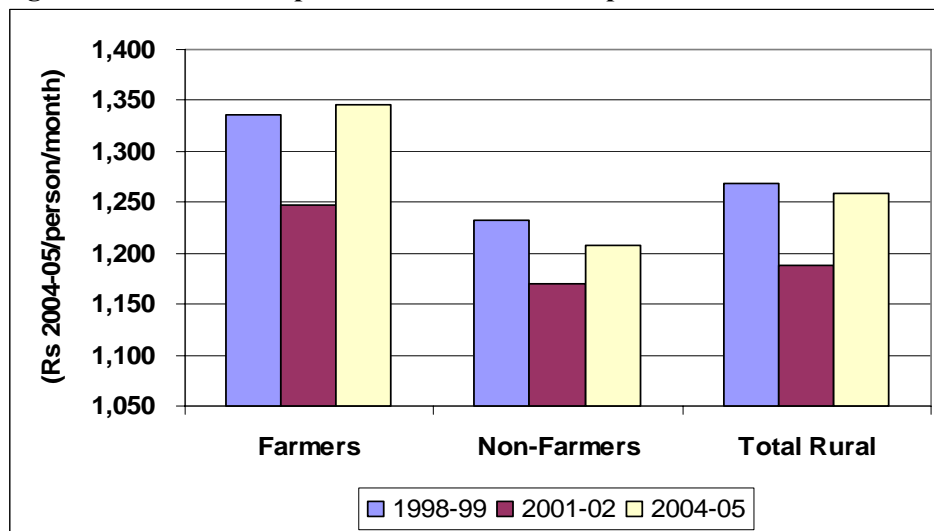
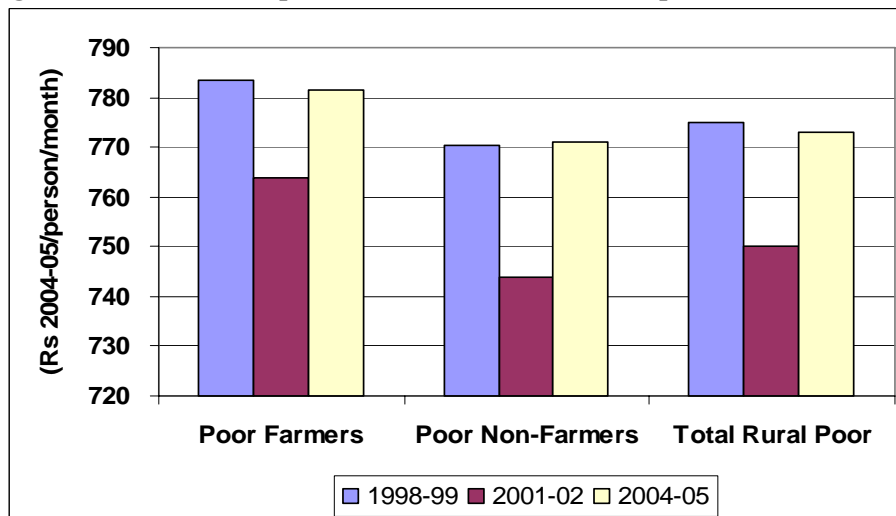


Figure 2.3. Real Per Capita Rural Poor Household Expenditures: 1998-99 to 2004-05



Source: PIHS 1998-99, 2001-02; PSLM 2004-05; and World Bank staff calculations.

Table 2.3. Sources of Income by Rural Household Group in Pakistan, 2004-05

Category	Crop	Livestock	Agric. Labor	Non-farm	Remittances	Other	Total
Poorest Quintile	17.8%	7.3%	7.7%	41.9%	8.6%	16.8%	100.0%
Quintile 2	21.2%	7.8%	5.2%	43.1%	7.2%	15.5%	100.0%
Quintile 3	24.2%	8.9%	3.8%	39.5%	9.2%	14.3%	100.0%
Quintile 4	30.2%	9.1%	1.5%	38.1%	8.1%	13.0%	100.0%
Quintile 5	30.2%	8.9%	1.5%	36.3%	9.3%	13.8%	100.0%
Total	24.7%	8.4%	3.9%	39.8%	8.5%	14.7%	100.0%
Rural Agriculture	43.6%	10.4%	7.3%	10.2%	12.3%	16.2%	100.0%
Rural Farm (Crops)	48.7%	11.0%	0.6%	10.1%	13.4%	16.3%	100.0%
Top 10% of Rural Crop Earners	46.0%	9.6%	0.0%	15.5%	13.2%	15.7%	100.0%
Rural Agricultural Labor	4.1%	5.5%	59.9%	10.8%	4.3%	15.4%	100.0%
Rural Non-farm	6.7%	6.5%	0.8%	67.9%	4.8%	13.3%	100.0%
Self-employed	6.6%	4.1%	0.7%	71.5%	4.0%	13.0%	100.0%
Other	6.7%	7.7%	0.8%	66.1%	5.2%	13.4%	100.0%
Rural Agriculture in L40	37.9%	9.1%	12.8%	8.8%	13.3%	18.1%	100.0%
Rural Farm (Crops) in L40	46.7%	10.2%	0.5%	8.2%	15.7%	18.6%	100.0%
Rural Agric. Labor in L40	2.2%	4.3%	62.9%	11.1%	3.5%	16.0%	100.0%
Rural Non-farm in L40	3.8%	6.3%	1.0%	71.1%	3.3%	14.5%	100.0%
Self-employed in L40	3.6%	2.3%	1.0%	75.6%	2.2%	15.2%	100.0%
Other in L40	3.8%	7.8%	1.0%	69.4%	3.7%	14.3%	100.0%
Rural Lower 40% (L40)	19.5%	7.6%	6.4%	42.5%	7.9%	16.2%	100.0%

Source: PSLM 2004-05 and World Bank staff calculations

Table 2.4. Real Per capita Expenditures of Rural Households in Pakistan, 1998-99, 2001-02 and 2004-05

	2005 Rs/adeq/month						
	1999	2002	2005	99-02 Change	02-05 Change	99-05 Change	
Quintile 1	651	638	648	-1.9%	1.5%	-0.4%	
Quintile 2	899	862	898	-4.2%	4.2%	-0.1%	
Quintile 3	1,105	1,043	1,098	-5.6%	5.4%	-0.6%	
Quintile 4	1,385	1,305	1,373	-5.7%	5.2%	-0.8%	
Quintile 5	2,300	2,097	2,280	-8.9%	8.7%	-0.9%	
Total Rural	1,268	1,189	1,259	-6.2%	5.9%	-0.7%	
Rural Agriculture	1,305	1,205	1,314	-7.7%	9.0%	0.7%	
Rural Farm (Crops)	1,335	1,247	1,346	-6.6%	7.9%	0.8%	
Top 10% of Rural Crop Earners	3,060	2,686	3,271	-12.2%	21.8%	6.9%	
Rural Agricultural Labor	1,078	962	1,028	-10.8%	6.9%	-4.6%	
Rural Non-farm	1,232	1,171	1,209	-5.0%	3.2%	-1.9%	
Self-employed	1,196	1,151	1,244	-3.8%	8.0%	3.9%	
Other	1,254	1,179	1,190	-6.0%	1.0%	-5.1%	
Rural Agriculture in L40	780	756	776	-3.1%	2.6%	-0.6%	
Rural Farmers (Crops) in L40	784	764	781	-2.5%	2.3%	-0.3%	
Rural Agricultural Labor in L40	764	728	748	-4.7%	2.7%	-2.1%	
Rural Non-farm in L40	770	744	771	-3.4%	3.6%	0.1%	
Self-employed in L40	768	748	762	-2.6%	1.8%	-0.8%	
Other in L40	772	740	775	-4.1%	4.7%	0.4%	
Rural Lower 40% (L40)	775	750	773	-3.2%	3.1%	-0.2%	

Source: PIHS 1998-99, 2001-02; PSLM 2004-05; and World Bank staff calculations.

Similar patterns—declines in real expenditures per capita between 1998-99 and 2001-02 and subsequent increases from 2001-02 to 2004-05—are observable in each province. In Punjab, the total change in real expenditures per capita over the 1998-99 to 2004-05 period was small, only 0.3 percent (-1.1 percent for the poorest 40 percent¹⁷ of households). Likewise, in Sindh, the total change for all rural households and for households in the poorest 40 percent of the national rural distribution were small (0.3 and 2.2 percent, respectively), though farmers' gains were substantially larger at 7.4 percent. Farmers in the NWFP and the poorest 40 percent of households also enjoyed substantial overall gains over the six-year period (11.0 percent and 5.9 percent, respectively), although the total rural population gained only 1.5 percent. In Baluchistan, the large decline in per capita expenditures between 1998-99 and 2001-02 (-17.4 percent for the total rural population and -11.9 percent for the poorest 40 percent) outweighed the rather small improvements experienced by most household groups in the 2001-02 to 2004-05 period. As a result, average real per capita expenditures actually fell by 14.0 percent from 1999-2000 to 2004-05 in rural Baluchistan (Annex Tables 2.1–2.4 and Annex Figures 2.1–2.8).

Changes in agricultural output and prices, driven to a large extent by weather, mirror the stagnation of real per capita expenditures, as well as their variation over the survey periods (Table 2.5 and Figure 2.4).¹⁸ There was substantial growth (4.2 percent per year) in real agricultural GDP between 2001-02 and 2004-05, but this growth rate does not reflect longer-term trends because real incomes and expenditures in 2001-02 were negatively affected by a drought that lowered crop production in many parts of Pakistan. Over the 1998-99 to 2004-05 period, the trend growth rate of real agricultural value-added was only 2.3 percent per year, (and only 0.2 percent per year in per capita terms). Moreover, during these periods, agricultural prices declined relative to overall rural prices.¹⁹ Deflating agricultural incomes (as measured by nominal GDP) by the overall rural price index, real agricultural income growth was only 0.2 percent (1.1 percent if the CPI used) and per capita agricultural incomes fell by 1.8 percent per year.

Fluctuations in wheat and cotton—the two most important crops in terms of gross value of production—were even larger than those of overall agricultural incomes, and help explain regional variations. Wheat production rose by only 2 percent between 1998-99 and 2001-02, but then increased by 16 percent between 2001-02 and 2004-05 (Annex Table 2.5). Real wholesale prices also increased by 16 percent in this latter period, so that the value of production increased by 34 percent, to the benefit of net wheat sellers (84.1 percent of producers and 32.0 percent of rural households, overall). Similarly, the real value of cotton production, which had fallen by 9 percent between 1998-99 and 2001-02, increased by 29 percent in 2004-05, as production rose by 38 percent relative to 2001-02.²⁰ This gain in gross cotton incomes helped boost real per capita expenditure of farm households in cotton-wheat cropping system districts in northern Sindh²¹ by 22 percent. Given the large number of farm households with expenditures just below the official

¹⁷ Data are for the poorest 40 percent of the rural per capita expenditure distribution.

¹⁸ Note that expenditure fluctuations are expected to be smaller than income fluctuations because of consumption smoothing (i.e. borrowing to offset declines in income).

¹⁹ The rural price index used here is based on the national CPI for the first triennium and the survey-based price deflator for the second triennium. See Annex Table 2.1 for details.

²⁰ Agricultural Census for 2000 data indicate little fluctuation in cropping pattern by size of farm, suggesting that fluctuations in yields and prices may have been similar across a range of farm sizes (World Bank, 2004b). However, larger farms' better access to water may have limited the decline in their yields during the 2001-02 drought.

²¹ The cotton-wheat cropping pattern region includes Khairpur, Sukkur, Nawabshah, Noshero Feroz, Ghotki, Hyderabad, Tharparkar and Sanghar. The 2004-05 PSLM survey sample included 532 farm households from these districts.

poverty line in 2001-02, gains in cotton incomes were likely a major factor behind the sharp reduction in rural poverty in Sindh.²²

Table 2.5. Growth Rates of Agricultural Output and Income in Pakistan, 1998-99 to 2004-05

	1998-99 to 2001-02	2001-02 to 2004-05	1998-99 To 2004-05
Real Agricultural GDP	0.9%	4.2%	2.3%
Agricultural Income I*	-2.0%	4.8%	1.1%
Agricultural Income II**	-2.0%	2.9%	0.2%
Per Capita Real Agricultural GDP	-1.2%	2.2%	0.2%
Per Capita Agricultural Income I*	-4.1%	2.7%	-1.0%
Per Capita Agricultural Income II*	-4.1%	0.9%	-1.8%

Source: Pakistan Economic Survey, various years; World Bank staff calculations.

Notes: * Nominal agricultural GDP divided by private consumption price index from national accounts.

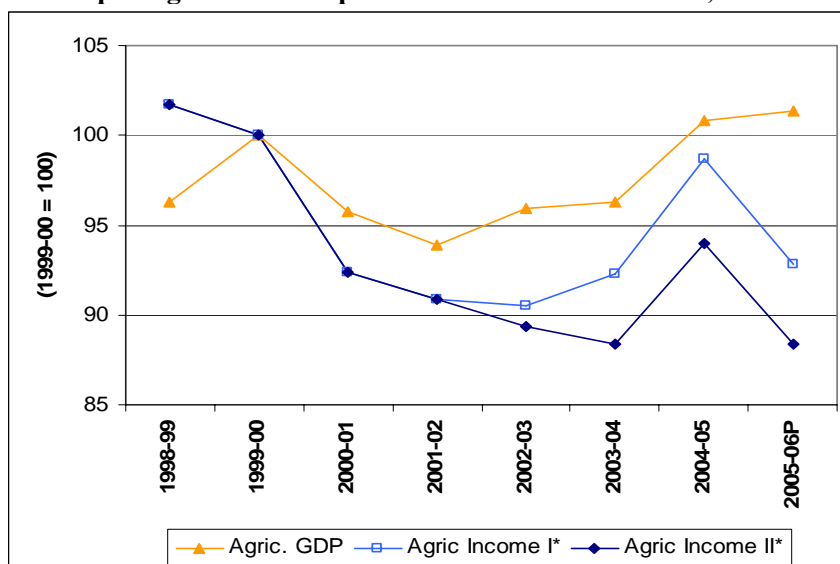
** Nominal agricultural GDP divided by the Survey Based Price Index that uses PRHS 2001-02, 2005-06 price data. See Annex Table 2.6 for details of the calculations.

Other factors have also contributed to good overall economic performance in recent years, as well as to gains in the real incomes (expenditures) of the rural poor.²³ Workers' remittances (some of which accrue directly to rural households), increased sharply from \$1.1 to \$4.2 billion between 2001-02 and 2002-03. However, as remittances have changed little between 2002-03 and 2004-05, further large increases seem unlikely. Growing demand for labor in the overall economy and in the construction sector in particular have also spurred urban and rural employment. Though increases in demand may have contributed to increased employment and incomes, they did not lead to increased real wage rates. In the 2001-02 to 2004-05 triennium, trend growth in real wages was 0.4 percent using the CPI as a deflator, although real wage rates fell by 1.1 percent per year using the national accounts price index of personal consumption as a deflator (Table 2.6). Over the six-year period from 1998-99 to 2004-05, real wage rates declined when assessed by either measure, by -0.9 percent or by -2.4 percent per year, respectively.

²² Using PIHS 2001-02 data, Orden and others (2005) estimate that a 10 percent increase in cotton prices leads to 11 percent and 6 percent increases in real incomes of cotton farmers in Sindh and Punjab, respectively. Cotton farmers account for 13 percent of the rural population nationally; poor cotton farmers are 3.5 percent of the rural population. Given that many cotton farmers in Sindh have incomes just below the poverty line, the poverty rate in Sindh drops the poverty rate *among cotton farmers* in Sindh from 50 percent to 39 percent (and from 36 percent to 31 percent *among cotton farmers* in Punjab). Nationally, rural poverty rates would fall by 0.5 percentage points. Unfortunately, no data on crop production was collected in the 2004-05 survey, so it is not possible to compare real incomes or poverty rates among cotton farmers in 2004-05 with data from earlier years.

²³ Smallholder farmers that derive much of their income from cotton are likely to be an exception to this general pattern.

Figure 2.4. Per Capita Agricultural Output and Real Income in Pakistan, 1998-99 to 2005-06



Source: Pakistan Economic Survey, various years; World Bank staff calculations.

Notes: P indicates provisional data.

* Nominal agricultural GDP divided by the price index for private consumption from the national accounts.

** Nominal agricultural GDP divided by the Survey Based Price Index that uses PRHS 2001-02, 2005-06 price data. See Annex Table 2.6 for details of the calculations.

Table 2.6. Real Wage Rates of Unskilled Labor in Pakistan, 1998-99 to 2004-05

	1998-99	2001-02	2004-05	1998-99 to 2001-02 (% change)	2001-02 to 2004-05 (% change)	1998-99 to 2004-05 (% change)
Wage Rate (Rs/day)	116.5	126.3	152.2	-2.3%	5.9%	3.5%
Real Wage (Rs 2004-05/day)*	153.7	148.8	152.2	-1.5%	0.4%	-0.9%
Real Wage (Rs 2004-05/day)**	166.9	155.8	152.2	-3.0%	-1.1%	-2.4%

Source: Pakistan Economic Survey 2006; World Bank staff calculations.

Notes: Wage rates are the average daily wage of unskilled construction labor in November in five major cities (provincial capitals plus Islamabad).

* Consumer Price Index used as a deflator.

** National accounts personal consumption price index used as a deflator.

Simulations using a computable general equilibrium (CGE) model for Pakistan also suggest that increases in workers' remittances and other capital inflows were the dominant factor in explaining the gain in rural incomes between 2001-02 and 2004-05. Model simulations indicate that the increases in wheat, paddy and cotton productivity (and area harvested of paddy) that occurred between 2001-02 and 2004-05 result in a 1 percent gain in both real incomes of rural poor households and of rural poor farm households.²⁴ An increase in workers' remittances has a much larger effect, however, raising incomes of rural households by four percent, though

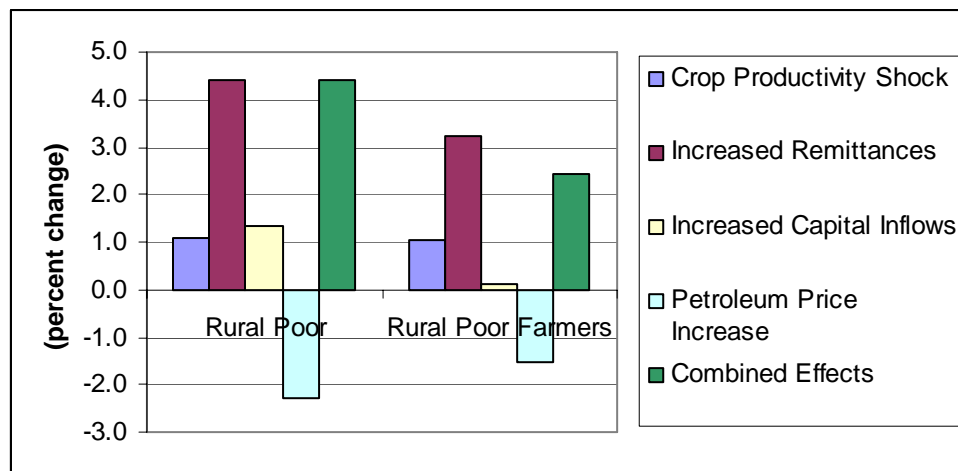
²⁴ Simulations of these agricultural productivity shocks with a fixed-price semi-input-output (SIO) multiplier model result in larger real income gains, about 5 percent for poor farmers and 3 percent for rural non-farm poor. This is so largely because prices do not decline as production increases, as occurs in the CGE simulations (particularly for cotton and rice). Note that these simulations model the productivity shocks as gains in output per capita with constant technology; the CGE simulations implicitly assume that land cultivated per capita does not change.

real incomes of poor farmers rise by only three percent because of a six-percent appreciation of the real exchange rate, which depresses real prices of tradable agricultural products. Including the effects of increased capital inflows and higher petroleum import prices, the total combined effects suggest that these four shocks raised rural incomes by 3.5 percent and real incomes of poor farmers by about 2.5 percent (Figure 2.5).

LONG-RUN DETERMINANTS OF POVERTY TRANSITIONS

Analysis of a panel data set of rural households from four districts of Pakistan (Attock, Badin, Dir and Faisalabad) covering the periods 1986-87 to 1990-91 and 2001-02²⁵ indicates a decline in real incomes over time, though with considerable variation across households and across districts (Annex Tables 2.7 and 2.8). Real incomes of many households declined between the early 1990s and 2002, despite modest gains in provincial and national agricultural output. Net crop income increased by 38 percent for the total sample, and by 81 percent for poor farmers, whose total incomes rose by 23 percent. Nevertheless, rural non-agricultural incomes fell by 30 percent overall and by 16 percent for poor households.

Figure 2.5. CGE Model Simulations of Shocks to Key Determinants of Rural Income in Pakistan



Source: Cororaton and Orden (2007).

The panel data also indicate considerable movement by households into and out of poverty, known as transitory poverty episodes (Figure .2.6). Although poverty rates tended to rise slightly over this period, (as reflected in the combined area of “poor” and “became poor” in Figure 2.6), about one quarter of households moved into or out of poverty each year. Between 1990-91 and 2001-02, however, the percentage of “chronic poor” (households who were poor in both the current and preceding periods) was essentially the same (about 35 percent). Third, poverty in the sample rose substantially in 2001-02, though 15 percent of households made a

²⁵ The household data set used in this analysis is made up of 14 rounds of the International Food Policy Research Institute (IFPRI) sample from 1986/87 to 1990/91, together with a sub-sample of panel data households included in PRHS 2001/02. The 571 household sample used in the analysis includes only the “base” households. Households that have split off from the base household are not included in this analysis. Note also that 103 households that had data for all five years of the IFPRI survey could not be traced after 11 years. On average, these households were poorer than the average household that could be traced: Their real incomes per adult equivalent were 24 percent lower, at Rs (2002) 11,756 compared with 13,842 and their value of household assets were 39 percent lower (Rs (2002) 160, 314 compared with 264,144.

transition out of poverty in this 11-year period, essentially the same percentage as in the earlier period. Poverty transitions using the 1987 to 1991 average income and 2001-02 income also indicate an increase in poverty, with 40 percent of households falling below the poverty line and only 9 percent of households escaping poverty (Figure 2.6).²⁶

Regression analyses indicate that primary and secondary education, land ownership, village electrification and paved roads are all significant factors determining changes in household welfare over time. Using a two-period panel data set consisting of the average of 1989-90 to 1990-91 as the first period and 2001-02 as the second period, and controlling for random effects across households,²⁷ the presence of an additional male with a secondary education in a household increases real expenditures (a measure of long-term incomes) by 10.2 percent; having a household head with primary education increases real expenditures by 21.5 percent (Annex Table 2.9, equation 4).²⁸ Owning five acres of either irrigated or non-irrigated land (a small farm by Pakistan standards) raises real expenditures by about 13 percent, or about half as much as having a household head with primary education. The regression coefficients also imply that village electrification raises real expenditures by about 75 percent and paved roads approximately double real expenditures.

Table 2.7. Real Incomes in Four Rural Districts in Pakistan by source, 1986-87 to 1991-92 and 2001-02

	Crops	Livestock	Non-Farm	Remittances	Total
Full sample					
1986-87 to 91-92 (Rs/hh)	4,592	1,882	5,111	1,780	13,522
1986-87 to 91-92 (share)	0.340	0.139	0.382	0.132	1.000
% change to 2002	22.2%	-18.1%	-30.1%	-49.4%	-13.1%
Poor households					
1986-87 to 91-92 (Rs/hh)	1,920	1,476	3,028	648	7,239
1986-87 to 91-92 (share)	0.265	0.204	0.421	0.090	1.000
% change to 2002	70.5%	-6.9%	-11.9%	2.5%	13.9%
Poor farm households					
1986-87 to 91-92 (Rs/hh)	2,558	1,733	2,436	593	7,498
1986-87 to 91-92 (share)	0.341	0.231	0.328	0.079	1.000
% change to 2002	72.5%	3.0%	-11.1%	6.3%	23.1%
Poor non-farm households					
1986-87 to 91-92 (Rs/hh)	237	797	4,588	793	6,556
1986-87 to 91-92 (share)	0.036	0.122	0.700	0.121	1.000
% change to 2002	15.9%	-63.4%	-13.1%	-5.0%	-14.0%

Source: Dorosh and Malik 2006.

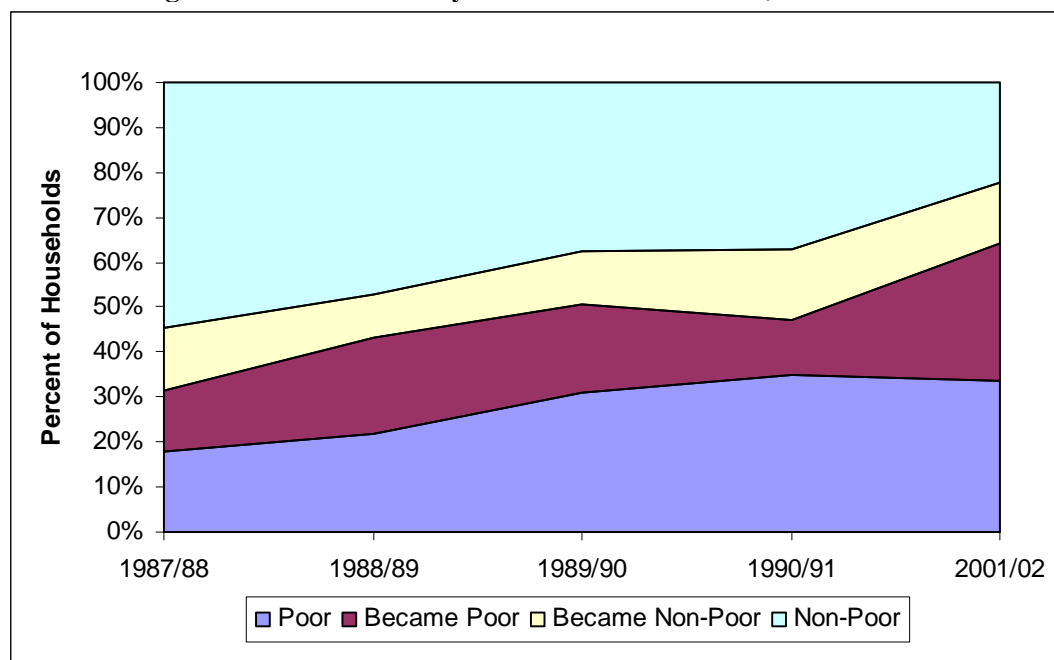
Notes: Calculated from IFPRI panel data set and PRHS 2001-02 for Attock, Badin, Dir and Faisalabad districts. Agricultural wage incomes, which account for less than two percent of total incomes, are not shown.

²⁶ In Figure 2.6, the percentage of households escaping poverty is indicated by “Became Non-Poor”.

²⁷ Village level dummy variables are also included to control for unobserved fixed effects.

²⁸ Comparing separate regressions from the two periods (Annex Table 2.9, columns 2 and 3), the effect of education on the head of household appears to have increased over time.

Figure .2.6. Rural Poverty Transitions in Pakistan, 1987-88 to 2001-02



Source: Authors' calculations from IFPRI panel data; PRHS 2001-02.

Notes: Poverty is defined relative to the national poverty line of 3,648 (1991) Rs/adult equivalent/year.

Table 2.8. Poverty Transitions in Rural Pakistan: 1987-91 to 2002

	1987-1991		2002	Chronic			Sample Size
	Total Poor	Total Poor	Poor	Ascending	Non-Poor	Descending	
Entire Sample	33%	64%	24%	9%	26%	40%	571
Bottom 40%	83%	73%	60%	23%	4%	13%	229
Farm	32%	60%	22%	10%	30%	38%	431
Non-Farm	37%	79%	31%	6%	15%	48%	140

Source: Dorosh and Malik 2006.

Notes: The bottom 40 percent is defined according to the 5-year average of real income per adult equivalent from 1987 to 1991.

Farm households are defined as those which had a minimum of 0.5 acres of land in operation on average over the 1987-1991 period.

Poverty is defined relative to the national poverty line of 3,648 (1991) Rs/adult equivalent/year.

Econometric evidence also suggests that the positive returns of education on income levels in rural Pakistan persist, even after taking into account innate cognitive ability. Analysis of the IFPRI Pakistan rural survey data by Fafchamps and Quisumbing (1999) found that one additional year of schooling for all adult males in a household raises household incomes by 8.9 percent due mainly to higher non-farm productivity (Box 2.1). Although the magnitude of these effects is likely to change over time as the proportion of educated labor in the total labor force rises and the structure of the economy changes, the results reinforce the importance of education in raising rural household incomes, particularly through non-farm activities.

Box 2.1. Human Capital and Household Incomes in Rural Pakistan

Using data from an International Food Policy Research Institute (IFPRI) survey of nearly 1000 rural households in four districts of Pakistan from 1986 to 1989, Fafchamps and Quisumbing (1999) found that education has significant effects on rural incomes. Controlling for the effects of background characteristics (land owned by father, inherited land, father's and mother's schooling) and innate ability (measured using the results of an administered test (Raven's Colored Progressive Matrices Test), one additional year of schooling for all adult males in a household (the mean number of adult males in a household in the sample was 2.0) raises household incomes by 8.9 percent. One-fifth of this additional income ensues from the re-allocation of labor away from agricultural activities and toward non-farm work. The remainder is due to higher non-farm productivity. However, this study found little evidence of the effect of male education on agricultural productivity, nor of female education on agricultural or non-farm productivity, though.

It should be noted, however, that this analysis of household data derives from the context of a "rural labor market with a very low supply of educated people and a mediocre nutritional status in general." (Fafchamps and Quisumbing 1999, 401) Given this environment, the marginal economic returns to education and nutrition for individuals are high. However, these economic returns would almost certainly be lower if a large number of individuals (relative to the size of the labor market) improved their skills and health status, as demand for labor might be insufficient to match the increase in effective labor supply without a decline in real wages. Thus, as the proportion of individuals in the labor force with improved skills and health status in Pakistan increases over time, the marginal returns to education and nutrition may diminish. Changes in the structure of economic output and increases in the share of skilled jobs in overall employment would tend to increase returns to education over time, however.

Source: Fafchamps and Quisumbing 1999.

NON-MONETARY INDICATORS OF WELFARE AND POVERTY

Despite essentially no change in the real per capita expenditures of the poorest 40 percent of the rural population between 1998-99 and 2004-05, there have been major improvements in other welfare indicators (Table 2.9 and Figure 2.7). The gross primary school enrollment rate rose 16 percentage points, from 63 to 79 percent over this period; net enrollment rates rose by 11 percentage points, from 37 to 48 percent.²⁹ The proportion of fully immunized children increased even more sharply, from 55 to 72 percent. Access to tap water nearly doubled, from 12 to 23 percent. For all non-monetary measures of welfare shown, however, urban residents fare much better than do rural residents, particularly with respect to access to tap water, adult literacy rates, and gross primary school enrollment rates.

²⁹ Gross primary school enrollment rates, defined as the number of children attending primary level (class 1-5) divided by the number of children aged 5-9 years, are an indicator of total attendance rates, and include children above the age cutoff. Net primary school enrollment rates are ratios and cover only the number of children aged 5-9 who attend primary school, and thus exclude children above 9 years or below 5 years.

Table 2.9: Social Indicators of Rural Households in Pakistan, 1988-99, 2001-02 and 2004-05

	Rural 1998-99	Rural 2001-02	Rural 2004-05	Urban 2004-05	Rural-Urban 2004-05
Gross Enrollment Rate	63	66	79	104	-25
Net Enrollment Rate	37	38	48	64	-16
Adult Literacy Rate	33	34	40	69	-29
Fully Immunized Children	45	46	72	87	-15
Electricity for Lighting	---	---	74	96	-22
Access to Tap Water	12	10	23	60	-37
Real Per Capita Expenditures	1268	1189	1259	1818	-31%
Bottom 40 Percent	775	750	773	824	-6%

Source: PIHS 1998-99, 2001-02; PSLM 2004-05.

Notes: * Real per capita expenditures of the bottom 40 percent in Rs (2004-05)/capita.

Gross Enrollment rate is the number of children attending primary level (classes 1-5) divided by the number of children aged 5-9 years.

Net Enrollment Rate is the number of children aged 5-9 years attending primary level (classes 1-5) divided by the total number of children aged 5-9 years.

Fully Immunized Children: The percentage of children aged 12-23 months that have been fully immunized based on record or recall.

Large disparities persist between male and female education and literacy rates (Table 2.10).

For girls, gross primary school enrollment rates rose by 18 percentage points, from 50 percent in 1998-99 to 68 percent in 2004-05, but they remain 21 percentage points below those for boys (89 percent). Similarly, net primary school enrollment rates for girls rose by 12 percentage points, to 42 percent in 2004-05, but this is still 11 percentage points below rates for boys. Similar patterns are observed for middle school enrollment rates in rural areas: 29 percent for girls as compared with 46 percent for boys. Gender gaps are declining only slowly: the disparity in gross primary and middle school enrollment rates declined by a mere five percentage points between 1998-99 and 2004-05. Gender gaps in net enrollment rates fell by only one or two percentage points. Adult literacy of rural women increased by 8 percentage points, to 24 percent in 2004-05, as compared to adult literacy of rural men, which rose by 5 percentage points to 56 percent.

Despite progress, Pakistan's social indicators still lag those of several other South Asian countries (See Figure 1 and Table 2.11).

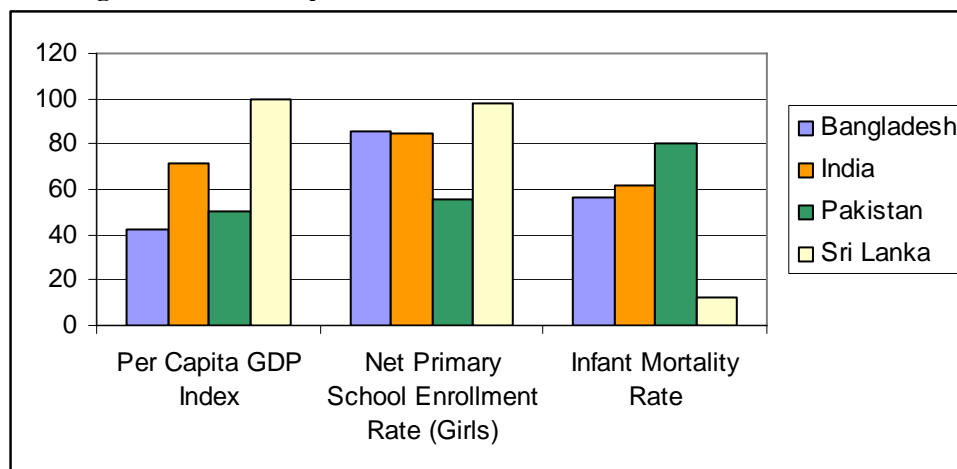
According to PSLM 2005-06 data, the primary school net enrollment rate for girls in Pakistan in rural areas is only 42 percent (48 percent nationally), compared to 86 percent in India (national), 84 percent in Bangladesh (national) and 98 percent in Sri Lanka (national). National infant mortality per 1000 live births is 80 in Pakistan (88 in rural areas) whereas it is only 62 and 12 in India and Sri Lanka, respectively. The infant mortality rate in Bangladesh is 56 per 1000 live births, although Bangladesh's per capita income of \$1870/person is 84 percent that of Pakistan (\$2225/person). These indicators suggest that there is considerable scope for continued improvement in these welfare indicators in Pakistan.

Table 2.10: Education and Literacy Rates in Pakistan, 1998-99, 2004-05

	1998-99 PIHS			2004-05 PSLM		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
Gross Primary Level Enrollment Rates (age 5-9)						
All Pakistan	80	61	71	94	77	86
Rural	75	50	63	89	68	79
Urban	95	92	94	107	100	104
Net Primary Level Enrollment Rates (age 5-9)						
All Pakistan	47	37	42	56	48	52
Rural	43	30	37	53	42	48
Urban	58	56	57	66	63	64
Gross Middle Level Enrollment Rates (age 10-12)						
All Pakistan	48	32	40	51	40	46
Rural	43	21	32	46	29	38
Urban	62	60	61	64	63	64
Net Middle Level Enrollment Rates (age 10-12)						
All Pakistan	19	13	16	20	16	18
Rural	16	9	13	17	11	14
Urban	27	25	26	27	27	27
Adult Literacy - 15 Years and Older						
All Pakistan	58	28	43	63	36	50
Rural	51	16	33	56	24	40
Urban	73	53	63	78	59	69

Source: PIHS 1998-99, 2001-02; PSLM 2004-05.

Figure .2.7: Per Capita GDP and Social Indicators in South Asia



Source: World Bank World Development Indicators 2006; UNESCO 2006; PSLM 2004-05; Deolalikar 2005.
 Notes: Per Capita GDP Index figures for Bangladesh are for 2003, and for India, Pakistan and Sri Lanka are for 2004.

Net Primary School Enrollment rates for girls figures for Bangladesh are for 2002, for India and Pakistan are for 2003, and for Sri Lanka, 2004.

Infant mortality rates figures for Bangladesh are for 2003, for India, Pakistan and Sri Lanka are for 2004.

Table 2.11: Social Indicators in South Asia

	Bangladesh*	India*	Sri Lanka*	Pakistan*	Pakistan PSLM (2004-05)**		
					Rural	Urban	All Pakistan
GDP per Capita	1870.3	3139.4	4389.6	2225.4	---	---	---
School Enrollment Gross	106.0	107.4	101.7	82.1	79	104	86
Male	105.0	110.9	102.4	94.6	89	107	94
Female	107.0	103.7	101.1	68.8	68	100	77
School Enrollment Net	84.0	87.0	99.0	66.0	48	64	52
Male	82.0	90.3	98.8	76.4	53	66	56
Female	86.0	84.4	98.4	55.5	42	63	48
Adult Literacy Rate (15 years +)	41.1	61.0	90.7	49.9	40	69	50
Male	50.3	73.4	92.3	63.0	56	78	63
Female	31.4	47.8	89.1	36.0	24	59	36
Mean Years of Schooling	3.9	5.0	9.2	3.5	---	---	---
Male	4.9	6.5	8.9	5.1	---	---	---
Female	2.9	3.6	9.5	2.0	---	---	---
Immunization, measles	77.0	56.0	96.0	67.0	---	---	---
Fully Immunized children	---	---	---	---	49	49	49
Infant mortality rate per 1000	56.4	61.6	12.0	80.2	---	---	---
Under-five mortality rate per 1000	77.0	85.2	14.1	100.8	---	---	---
Improved Water Source	75.0	86.0	78.0	90.0	---	---	---
Access to Tap Water	---	---	---	---	23	39	60
Electricity Consumption per Capita	108.0	421.0	300.0	384.0	---	---	---

Source: * WDI Database, UNESCO (Bangladesh education figures) (2006), EEDRB (electricity consumption figures)

** PSLM 2004-2005.

Notes: All GDP per Capita, Adult Literacy Rates, Immunization and Mortality Rates figures are for 2004, except Bangladesh, which are for 2003;

Mean Years of Schooling figures for Bangladesh and India are for 2000, for Pakistan are for 2001 and for Sri Lanka, 2002.

School Enrollment Rates Gross and Net for India and Sri Lanka are from 2003, for Bangladesh are for 2002 and for Pakistan, 2004;

All Improved Water Source, Electricity Consumption per Capita figures are for 2002.

Improved Water Source: Percentage of households with access to tap water.

Electricity Consumption per Capita (Kwh/capita)

Box 2.2: Reducing Infant Mortality in Pakistan

Econometric analysis of household data from the Pakistan Socio-Economic Survey (PSES), 2000-01 indicates that household income is not a major determinant of infant mortality in Pakistan and that it is only one of several determinants of child malnutrition of children.

The survey data indicate that the average infant mortality rate in rural areas in 2000-01 (covering children born over the 1991-99 period) was 85 per 1000 live births, (compared to 61 in urban areas). The major determinants of infant mortality (defined as the probability of an infant dying during the first 12 months of his or her life) include: household sanitation (having a flush toilet in the household correlates with a decline in infant mortality of 15 per 1000 live births); immunizations (a 1-percent increase in the proportion of children immunized in a district results in a decrease of 9.6 deaths per 1000 live births); and level of mother's education (post-middle school and above). Controlling for other factors, infant mortality rates actually increase as per capita expenditures rise, although this is likely due to spurious correlation. Nonetheless, results strongly suggest that public health measures (immunizations), household sanitation and mother's education all contribute to reducing infant mortality, even in the absence of income growth.

As expected, the probability of a child aged 0-59 months being underweight falls with rising per capita household consumption: a 1 percent increase in per capita household consumption is associated with a 7.6 percentage point decrease in the probability of a child being underweight, from an average of 47.5 percent (PSES 2001-02) to 39.9 percent. But other factors such as mother's formal schooling, electrification of the home and the installation of a flush toilet in the household each contributes to a five percent decline in the proportion of underweight children). Clearly, public investments and public-service delivery related to formal schooling, electricity and sanitation can have a major impact on malnutrition, even in the absence of household income growth.

Source: Deolalikar, A., May 2005. *Attaining the Millennium Development Goals in Pakistan*. South Asia Human Development Sector, Discussion Paper Series Report No. 8. Washington, D.C.: World Bank.

SUMMARY

Survey evidence points to an encouraging 5.1 percentage point decline in rural poverty, from 39.1 percent to 34.0 percent between 2001-02 and 2004-05, and a 3.1 percent increase in the incomes of the poorest 40 percent of the rural income distribution (World Bank estimates). However, longer-term trends (1998-99 to 2004-05) show only very small changes in real per capita expenditures of the rural poor or in the level of rural poverty. Analysis of the structure of household incomes and sectoral output suggest that much improvement in the three-year period reflects a dip in 2001-02 incomes due to drought and lower cotton production. Nonetheless, in spite of the relatively small change in real per capita expenditure over the six-year period, there have been marked improvements in non-monetary welfare indicators, including child immunization, access to drinking water, and electrification of the home. Moreover, educational levels, which are a major factor in raising incomes, have also risen, suggesting improved prospects for future income growth.

Table A 2-1. Rural Households' Real Per Capita Expenditures in Punjab, Pakistan, 1998-99, 2001-02 and 2004-05

	2005 Rs/adeq/month					
	1999	2002	2005	1999 to 2002 Change	2002 to 2005 Change	1999 to 2005 Change
Quintile 1	652	634	647	-2.7%	2.0%	-0.7%
Quintile 2	901	863	900	-4.2%	4.3%	-0.1%
Quintile 3	1,103	1,045	1,097	-5.3%	5.0%	-0.6%
Quintile 4	1,385	1,312	1,379	-5.3%	5.1%	-0.5%
Quintile 5	2,305	2,134	2,333	-7.4%	9.3%	1.2%
Total Rural	1,305	1,270	1,309	-2.6%	3.1%	0.3%
Rural Agriculture	1,394	1,343	1,405	-3.7%	4.6%	0.8%
Rural Farm (Crops)	1,454	1,409	1,463	-3.1%	3.9%	0.7%
Top 10% of Rural Crop Earners	3,034	2,714	3,311	-10.5%	22.0%	9.1%
Rural Agricultural Labor	992	945	953	-4.7%	0.8%	-4.0%
Rural Non-Farm	1,218	1,199	1,231	-1.5%	2.6%	1.0%
Self-employed	1,178	1,166	1,257	-1.0%	7.8%	6.8%
Other	1,253	1,216	1,214	-3.0%	-0.1%	-3.1%
Rural Agriculture in L40	798	770	775	-3.5%	0.6%	-2.9%
Rural Farm in L40	812	781	790	-3.7%	1.1%	-2.7%
Rural Agricultural Labor in L40	750	741	723	-1.2%	-2.4%	-3.6%
Rural Non-Farm in L40	761	737	764	-3.2%	3.7%	0.3%
Self-employed in L40	755	744	752	-1.4%	1.0%	-0.4%
Other in L40	768	733	770	-4.5%	5.0%	0.3%
Rural Lower 40% (L40)	777	751	768	-3.3%	2.3%	-1.1%

Source: PIHS 1998-99, 2001-02; PSLM 2004-05.

Table A 2-2. Rural Households' Real Per Capita Expenditures in Sindh, Pakistan, 1998-99, 2001-02 and 2004-05

	2005 Rs/adeq/month					
	1999	2002	2005	1999 to 2002 Change	2002 to 2005 Change	1999 to 2005 Change
Quintile 1	643	624	647	-3.1%	3.7%	0.5%
Quintile 2	902	861	897	-4.6%	4.3%	-0.5%
Quintile 3	1,108	1,041	1,101	-6.0%	5.7%	-0.7%
Quintile 4	1,380	1,293	1,370	-6.3%	5.9%	-0.7%
Quintile 5	2,295	1,953	2,199	-14.9%	12.6%	-4.2%
Total Rural	1,237	1,049	1,241	-15.3%	18.4%	0.3%
Rural Agriculture	1,186	1,012	1,251	-14.6%	23.5%	5.4%
Rural Farm (Crops)	1,172	1,023	1,259	-12.7%	23.1%	7.4%
Top 10% of Rural Crop Earners	3,139	2,519	3,238	-19.7%	28.5%	3.1%
Rural Agricultural Labor	1,288	976	1,187	-24.2%	21.6%	-7.8%
Rural Non-Farm	1,301	1,117	1,228	-14.1%	9.9%	-5.6%
Self-employed	1,295	1,177	1,240	-9.1%	5.4%	-4.3%
Other	1,303	1,102	1,223	-15.4%	11.0%	-6.1%
Rural Agriculture in L40	758	722	784	-4.7%	8.6%	3.5%
Rural Farm in L40	753	729	778	-3.3%	6.7%	3.3%
Rural Agricultural Labor in L40	816	701	823	-14.0%	17.4%	0.9%
Rural Non-Farm in L40	792	738	795	-6.9%	7.7%	0.3%
Self-employed in L40	815	769	771	-5.7%	0.4%	-5.3%
Other in L40	783	731	802	-6.7%	9.8%	2.4%
Rural Lower 40% (L40)	772	727	789	-5.8%	8.5%	2.2%

Source: PIHS 1998-99, 2001-02; PSLM 2004-05.

Table A 2-3. Rural Households' Real Per Capita Expenditures in NWFP, Pakistan, 1998-99, 2001-02 and 2004-05

	2005 Rs/adeq/month					
	1999	2002	2005	1999 to 2002 Change	2002 to 2005 Change	1999 to 2005 Change
Quintile 1	614	661	638	7.7%	-3.4%	4.0%
Quintile 2	824	838	885	1.6%	5.6%	7.3%
Quintile 3	1006	981	1,073	-2.5%	9.3%	6.6%
Quintile 4	1249	1,193	1,302	-4.4%	9.1%	4.2%
Quintile 5	2035	1,930	1,918	-5.2%	-0.6%	-5.8%
Total Rural	1145	1,120	1,162	-2.2%	3.7%	1.5%
Rural Agriculture	1,110	1,098	1,226	-1.1%	11.7%	10.5%
Rural Farm (Crops)	1,114	1,104	1,237	-0.9%	12.0%	11.0%
Top 10% of Rural Crop Earners	3,339	2,633	3,397	-21.1%	29.0%	1.7%
Rural Agricultural Labor	1,059	951	1,078	-10.2%	13.4%	1.9%
Rural Non-Farm	1,176	1,142	1,103	-2.9%	-3.5%	-6.3%
Self-employed	1,153	1,064	1,147	-7.7%	7.8%	-0.5%
Other	1,188	1,175	1,091	-1.1%	-7.2%	-8.2%
Rural Agriculture in L40	713	756	786	6.1%	4.0%	10.3%
Rural Farm in L40	709	757	791	6.7%	4.5%	11.5%
Rural Agricultural Labor in L40	751	751	754	-0.1%	0.4%	0.4%
Rural Non-Farm in L40	724	743	743	2.6%	0.0%	2.6%
Self-employed in L40	721	747	765	3.6%	2.3%	6.0%
Other in L40	726	741	739	2.1%	-0.3%	1.8%
Rural Lower 40% (L40)	719	749	761	4.2%	1.6%	5.9%

Source: PIHS 1998-99, 2001-02; PSLM 2004-05.

Table A 2-4. Rural Households' Real Per Capita Expenditures in Baluchistan, Pakistan, 1998-99, 2001-02 and 2004-05

	2005 Rs/adeq/month					
	1999	2002	2005	1999 to 2002 Change	2002 to 2005 Change	1999 to 2005 Change
Quintile 1	753	693	638	-7.9%	-8.0%	-15.2%
Quintile 2	1,019	868	885	-14.8%	1.9%	-13.1%
Quintile 3	1,205	1,022	1073	-15.2%	5.0%	-11.0%
Quintile 4	1,483	1,223	1302	-17.5%	6.4%	-12.2%
Quintile 5	2,308	1,781	1918	-22.8%	7.7%	-16.9%
Total Rural	1,351	1,117	1,162	-17.4%	4.1%	-14.0%
Rural Agriculture	1,417	1,125	1,226	-20.6%	9.0%	-13.5%
Rural Farm (Crops)	1,447	1,147	1,237	-20.8%	7.9%	-14.5%
Rural Non-Farm	1,305	1,110	1,103	-15.0%	-0.6%	-15.5%
Rural Agriculture in L40	898	800	786	-10.9%	-1.7%	-12.4%
Rural Farm in L40	908	810	791	-10.8%	-2.4%	-12.9%
Rural Non-Farm in L40	880	767	743	-12.8%	-3.1%	-15.6%
Rural Lower 40% (L40)	886	781	761	-11.9%	-2.5%	-14.1%

Source: PIHS 1998-99, 2001-02; PSLM 2004-05.

Table A 2-5. Wheat and Cotton Production and Incomes in Pakistan, 1998-99, 2001-02 and 2004-05

	1998-99	2001-02	2004-05	1998-99 to 2001-02	2001-02 to 2004-05	1998-99 to 2004-05
Wheat						
Area (000 ha)	8,230	8,058	8,330	-2.1%	3.4%	1.2%
Yield (tons/ha)	2.17	2.26	2.53	4.2%	12.0%	16.8%
Production (000 tons)	17,858	18,226	21,109	2.1%	15.8%	18.2%
Production per capita (kgs)	134.5	126.7	138.4	-5.8%	9.2%	2.9%
Wholesale Price (Rs 2005/kg) CPI	9.6	9.2	11.2	-3.4%	21.2%	17.1%
Wholesale Price (Rs 2005/kg) PC	10.4	9.7	11.2	-6.9%	15.7%	7.8%
Value Production (bn Rs 2005) PC	185.6	176.4	236.4	-5.0%	34.0%	27.4%
Production per capita (Rs 2005) PC	1,780	1,562	1,974	-12.3%	26.4%	10.9%
Cotton						
Area (000 ha)	2,923	3,116	3,221	6.6%	3.4%	10.2%
Yield (tons/ha)	0.51	0.58	0.77	13.2%	33.2%	50.9%
Production (000 tons)	1,495	1,805	2,486	20.7%	37.7%	66.3%
Production per capita (kgs)	11.3	12.6	16.3	11.4%	29.9%	44.7%
Wholesale Price (Rs 2005/kg) CPI	28.9	22.6	22.1	-21.9%	-1.9%	-23.4%
Wholesale Price (Rs 2005/kg) PC	31.4	23.6	22.1	-24.7%	-6.4%	-29.5%
Value Production (bn Rs 2005) PC	46.9	42.7	55.0	-9.1%	28.9%	17.2%
Production per capita (Rs 2005) PC	450	378	459	-16.1%	21.6%	2.0%
Wheat and Cotton						
Value Production (bn Rs 2005)	232.5	219.0	291.4	-5.8%	33.0%	25.3%
Production per capita (Rs 2005)	2,230	1,940	2,433	-13.0%	25.4%	9.1%

Source: Pakistan Economic Survey 2006; World Bank staff calculations.

Table A 2-6. Estimates of Agricultural Output and Incomes in Pakistan, 1998-99 to 2005-06

	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06P	Growth Rate
	(bn 1999-2000 Rs)								
Agricultural GDP	0.871	0.924	0.903	0.904	0.943	0.965	1.030	1.055	2.6%
Agricultural Income I*	0.919	0.924	0.872	0.875	0.889	0.925	1.009	0.966	1.2%
Agricultural Income II**	0.919	0.924	0.872	0.875	0.878	0.886	0.960	0.919	0.3%
	(1999-2000 = 100)								
Per Capita Agricultural GDP	96.3	100.0	95.8	93.9	96.0	96.3	100.8	101.4	0.5%
Per Capita Agricultural Income I*	101.7	100.0	92.4	90.9	90.5	92.3	98.7	92.8	-0.8%
Per Capita Agricultural Income II**	101.7	100.0	92.4	90.9	89.3	88.4	94.0	88.3	-1.7%
Consumer Price Index (CPI)	96.5	100.0	104.4	108.1	111.5	116.5	127.4	137.6	4.9%
Agricultural GDP Price Index	100.6	100.0	104.6	107.1	112.3	120.7	133.7	141.4	5.3%
Private Consumption Price Index	95.3	100.0	108.4	110.6	119.1	126.0	136.5	154.5	6.7%
Survey Based Price Index	95.3	100.0	108.4	110.6	120.6	131.5	143.4	162.3	7.7%

Source: Pakistan Economic Survey, various years; World Bank staff calculations.

Notes: * Nominal agricultural GDP divided by the private consumption price index from national accounts.

** Nominal agricultural GDP divided by the Survey Based Price Index, which uses price information from rural household survey data in 2001-02 and 2005-06.

Nominal agricultural GDP in 1998-99 is calculated using the percentage change in nominal agricultural GDP between 1997-98 and 1998-99 from the 1980-81 base national accounts, and the figure for nominal agricultural GDP in 1999-2000 from the 1999-2000 national accounts. The agricultural GDP price deflator for 1998-99 is calculated using the percentage change in the agricultural GDP price deflator between 1998-99 and 1999-2000 from the 1980-81 base national accounts series;

The Survey Based Price Deflator is equal to the Private Consumption Price Index for 1998-99 through 2001-02. The value for 2004-05 is calculated using the percentage change in the rural price indices between HIES 2001-02 and PSLM 2004-05 (29.6 percent; see World Bank 2006c). Values between 2001-02 and 2004-05 are interpolated using a constant growth rate. The value for 2005-06 is calculated using the inflation rate for that year from the Private Consumption Price Index.

Table A 2-7. Real incomes in Four Districts in Rural Pakistan by source, 1986-87 to 1991-92 and 2002

District/Year	Rental earnings in crops	Net crop profit	Farm wage income	Non-farm income	Net livestock profit	Returns to capital	Remittances	Pension	Total income
Full sample									
1986-87 to 91-92 (Rs/hh)	1,156	3,436	157	4,472	1,882	575	1,780	123	13,522
1986-87 to 91-92 (share)	0.086	0.254	0.012	0.331	0.139	0.043	0.132	0.009	1.000
% change to 2002	-24.4%	37.8%	37.2%	-30.2%	-18.1%	-49.7%	-49.4%	-15.7%	-13.1%
Poor households in 1986-87 to 1991-92 (bottom 40 percent)									
1986-87 to 91-92 (Rs/hh)	215	1,705	167	2,911	1,476	75	648	61	7,239
1986-87 to 91-92 (share)	0.030	0.236	0.023	0.402	0.204	0.010	0.090	0.008	1.000
% change to 2002	-10.2%	80.7%	76.3%	-15.7%	-6.9%	60.0%	2.5%	22.0%	13.9%
Poor farm households									
1986-87 to 91-92 (Rs/hh)	245	2,313	177	2,300	1,733	100	593	61	7,498
1986-87 to 91-92 (share)	0.033	0.308	0.024	0.307	0.231	0.013	0.079	0.008	1.000
% change to 2002	-5.2%	80.7%	54.0%	-16.6%	3.0%	63.2%	6.3%	1.8%	23.1%
Poor non-farm households									
1986-87 to 91-92 (Rs/hh)	135	103	140	4,521	797	9	793	61	6,556
1986-87 to 91-92 (share)	0.021	0.016	0.021	0.690	0.122	0.001	0.121	0.009	1.000
% change to 2002	-33.9%	81.4%	150.8%	-14.4%	-63.4%	-30.0%	-5.0%	74.7%	-14.0%

Source: Dorosh and Malik 2006.

Notes: Calculated from IFPRI panel data set, including IFPRI panel households in the PRHS (2001-02) data set.

Table A 2-8. Real incomes of Poor Households in Four Districts in Rural Pakistan by source, 1986-87 to 1991-92 and 2002

	Crops	Livestock	Non-Farm	Remittances	Total
Full sample					
1986-87 to 91-92 (Rs/hh)	4,592	1,882	5,111	1,780	13,522
1986-87 to 91-92 (share)	0.340	0.139	0.382	0.132	1.000
% change to 2002	22.2%	-18.1%	-30.1%	-49.4%	-13.1%
Poor households					
1986-87 to 91-92 (Rs/hh)	1,920	1,476	3,028	648	7,239
1986-87 to 91-92 (share)	0.265	0.204	0.421	0.090	1.000
% change to 2002	70.5%	-6.9%	-11.9%	2.5%	13.9%
Poor farm households					
1986-87 to 91-92 (Rs/hh)	2,558	1,733	2,436	593	7,498
1986-87 to 91-92 (share)	0.341	0.231	0.328	0.079	1.000
% change to 2002	72.5%	3.0%	-11.1%	6.3%	23.1%
Poor non-farm households					
1986-87 to 91-92 (Rs/hh)	237	797	4,588	793	6,556
1986-87 to 91-92 (share)	0.036	0.122	0.700	0.121	1.000
% change to 2002	15.9%	-63.4%	-13.1%	-5.0%	-14.0%

Source: Dorosh and Malik 2006.

Notes: Calculated from IFPRI panel data set, including IFPRI panel households in the PRHS 2001-02 data set.

Table A 2-9. Determinants of Real Incomes and Expenditures in Rural Pakistan, Regression Results

Period Dependent variable	Average 87-91		Average 90-91		2002		Panel changes					
	Real income		Real Expenditure		Real Expenditure		Real Expenditure					
	Coef.	t-statistic	Coef.	t-statistic	Coef.	t-statistic	Coef.	z-statistic				
Share of remittances in income	---	---	-0.0459	-0.30	0.0020	0.07	0.0055	0.13				
Male youths (% of household)	-0.9445	**	-5.20	-0.7631	**	-2.69	-0.1289	-0.49	-0.4667	*	-1.89	
Children (% of household)	-0.6292	**	-4.89	-0.6510	**	-3.30	-0.4005	*	-1.75	-0.4698	**	-2.92
Female youths (% of household)	-0.8836	**	-4.96	-0.6765	**	-2.78	-0.5691	**	-2.17	-0.5499	**	-2.32
Males w/ basic educ. (% of males)	0.1145		0.73	-0.1592		-0.76	-0.1146		-0.97	-0.1844		-0.90
Males w/ second. Educ. (% of males)	0.9198	**	5.06	0.6295	**	2.73	0.3489	**	2.15	0.4869	**	2.14
Females w/ basic educ. (% of females)	0.0316		0.16	0.0663		0.25	-0.0677		-0.36	-0.1544		-0.62
Females w/ sec. educ. (% of females)	0.1913		0.38	-0.6054		-0.94	0.2846		0.96	0.4752		0.74
Household head basic educ. (yes = 1)	0.0788		1.44	0.0126		0.18	0.1854	**	2.78	0.1949	**	3.01
Rain fed land owned (acres)	0.0066	**	3.07	0.0078	**	3.84	0.0088	**	3.24	0.0099	**	4.45
Irrigated land owned (acres)	0.0163	**	7.04	0.0115	**	2.67	0.0049	**	2.61	0.0096	**	5.15
Value of vehicles (000 2002 Rs)	0.0016	**	2.23	0.0004		0.54	0.0000		0.92	0.0008	**	2.23
Value of tools (000 2002 Rs)	0.0028	**	3.13	0.0002		0.15	0.0000		0.05	0.0018	**	2.56
Tractor ownership (yes = 1)	0.0960	**	2.04	0.0023		0.03	0.0099		0.09	-0.5273	**	-8.78
Village electrified	0.1101		0.39	-0.0575		-0.15	0.7528		1.41	0.5659	**	8.89
Village – paved road	0.4614		1.38	-0.6392		-1.47	0.3503	*	1.68	0.6975	**	14.55
Village - public drainage	-0.4702	**	-1.92	-0.0817		-0.43	-0.5613		-0.99	-0.0103		-0.12
Constant	9.2359	**	24.37	8.7335	**	11.03	8.5548	**	108.06	7.6577	**	87.01
N	571		571		571		1142					
R-squared	0.545		0.259		0.259		0.339					
Within	---		---		---		0.4745					
Between	---		---		---		0.175					

Source: Authors' calculations.

Notes: Regression 4: Random effects estimation: $u_i \sim \text{Gaussian}$, Wald $\chi^2(17) = 576.36$. $\text{corr}(u_i, X) = 0$ (assumed), $\text{Prob} > \chi^2 = 0.000$.

* Significant at 90 percent confidence level; ** Significant at 95 percent confidence level.

Figure A 2-1. Real Per Capita Household Expenditures of Rural Households in Punjab, Pakistan, 1998-99, 2001-02 and 2004-05

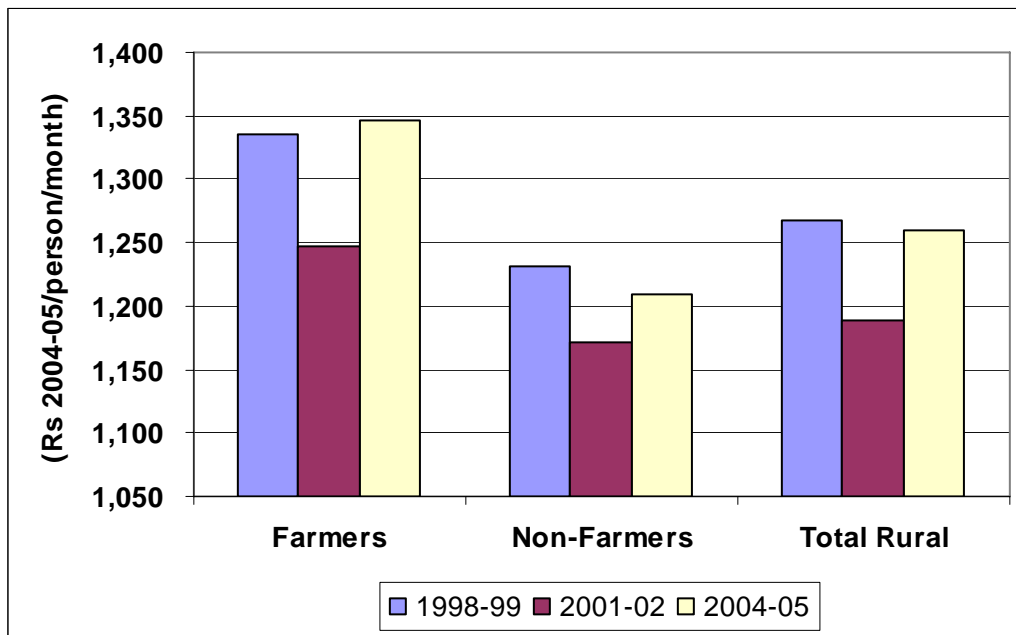


Figure A 2-2. Real Per Capita Household Expenditures of Rural Poor Households in Punjab, Pakistan: 1998-99, 2001-02 and 2004-05

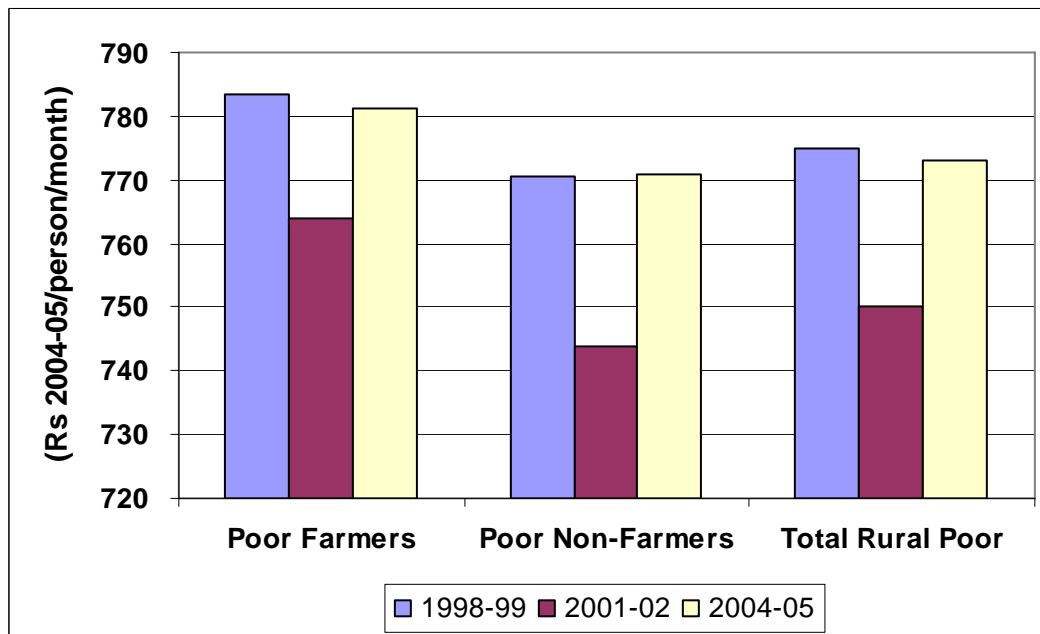


Figure A 2-3. Real Per Capita Household Expenditures of Rural Households in Sindh, Pakistan, 1998-99, 2001-02 and 2004-05

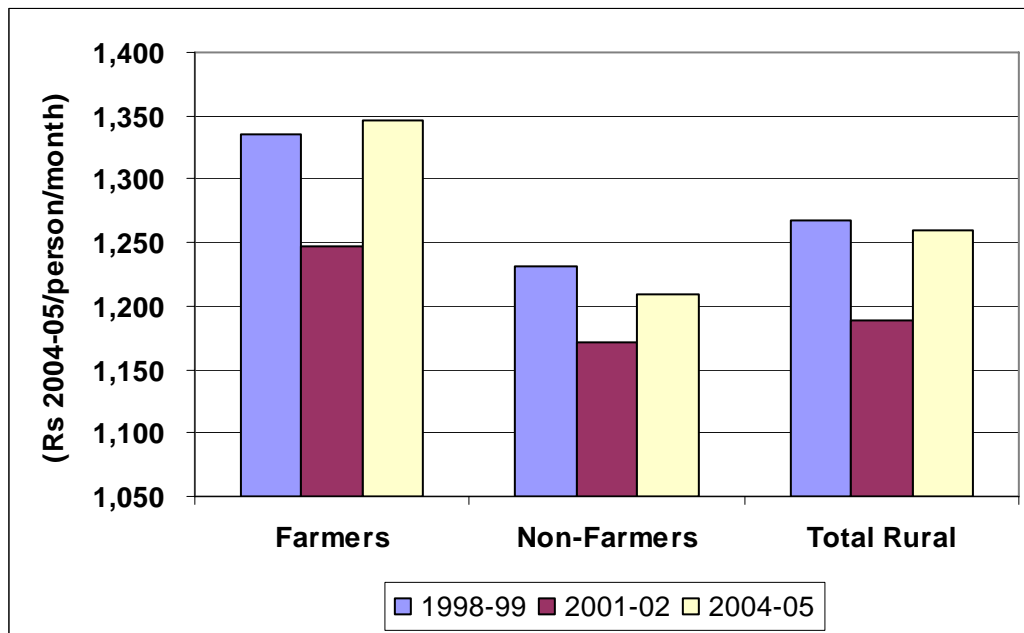


Figure A 2-4. Sindh: Real Per Capita Household Expenditures of Rural Poor Households: 1998-99, 2001-02 and 2004-05

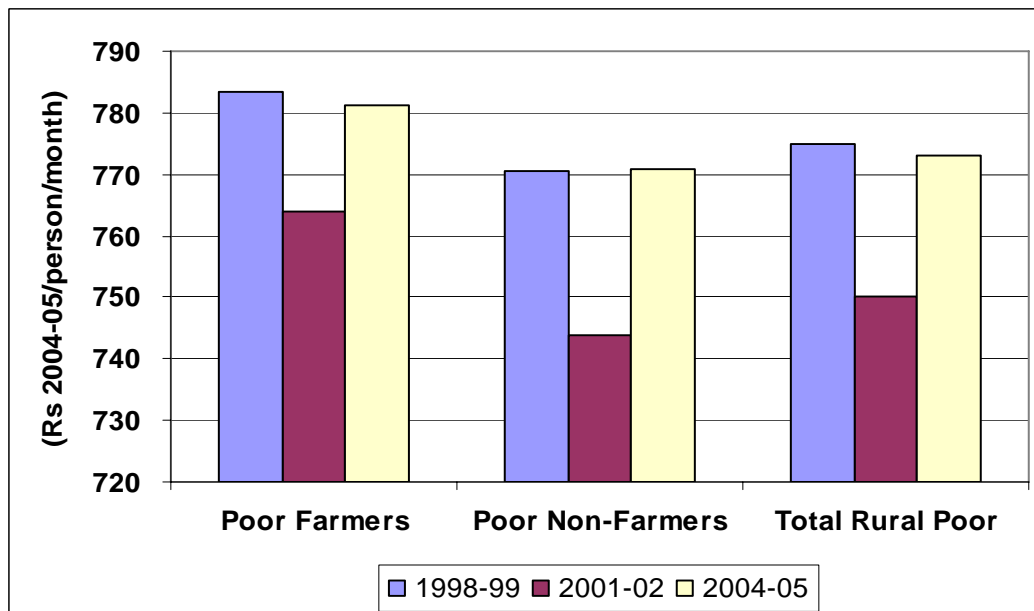


Figure A 2-5. Real Per Capita Household Expenditures of Rural Households in NWFP, Pakistan, 1998-99, 2001-02 and 2004-05

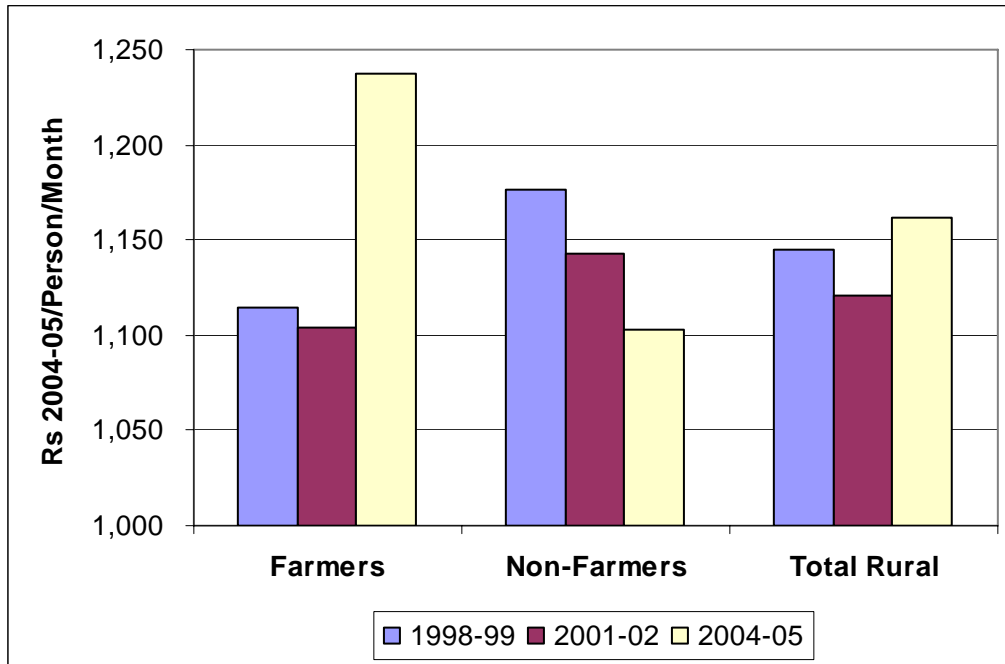


Figure A 2-6. NWFP: Real Per Capita Household Expenditures of Rural Poor Households: 1998-99, 2001-02 and 2004-05

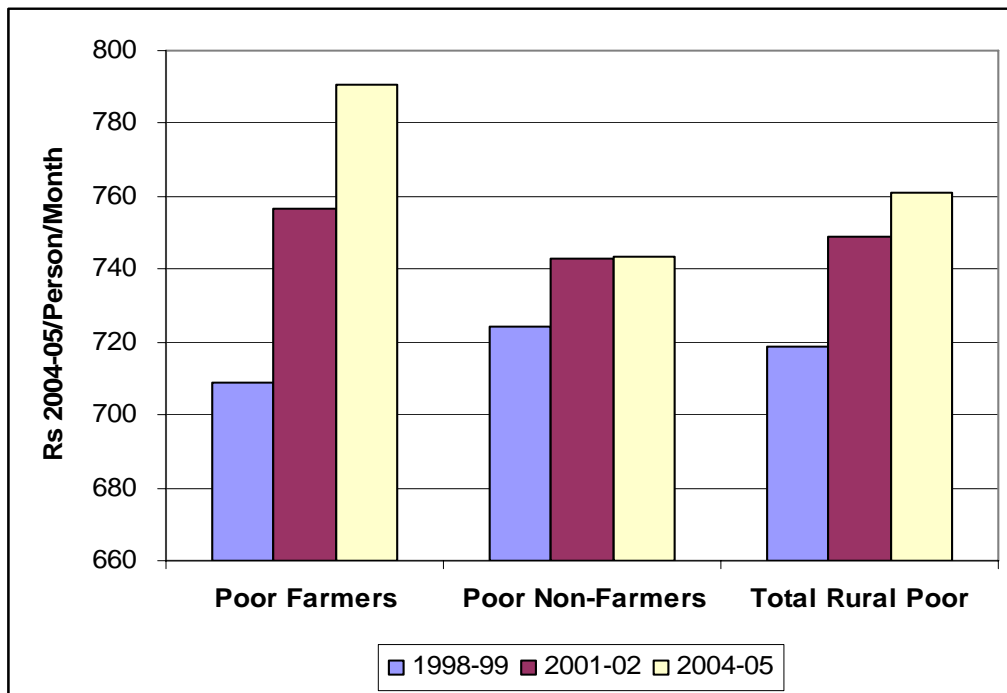


Figure A 2-7. Baluchistan: Real Per Capita Household Expenditures of Rural Households: 1998-99, 2001-02 and 2004-05

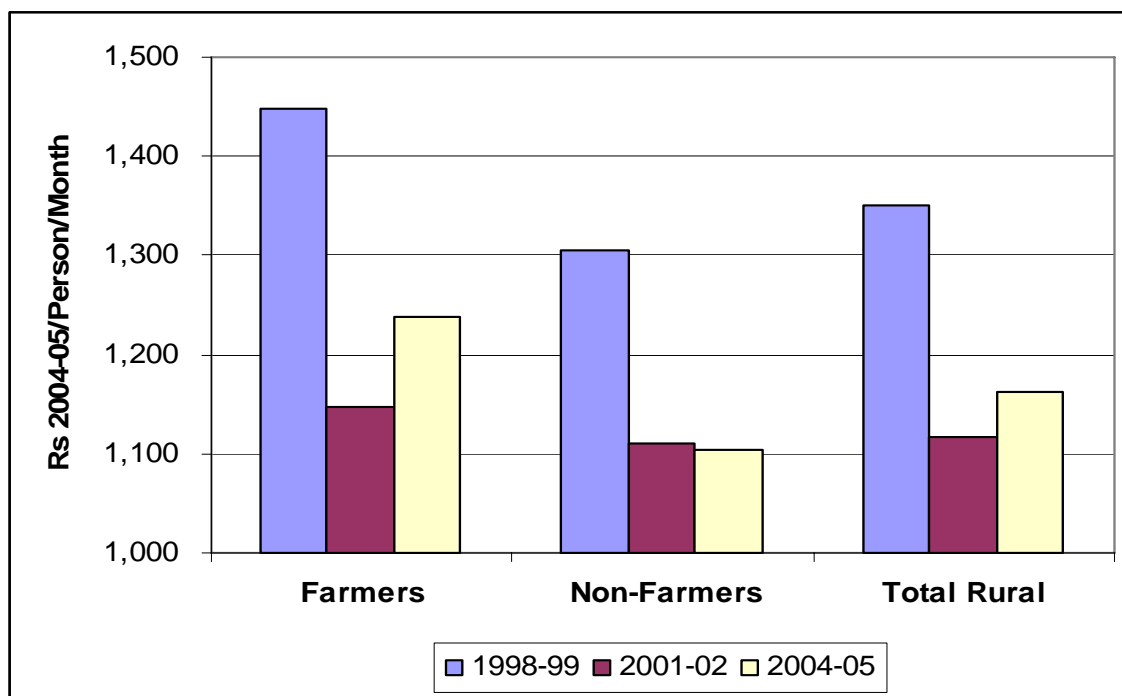
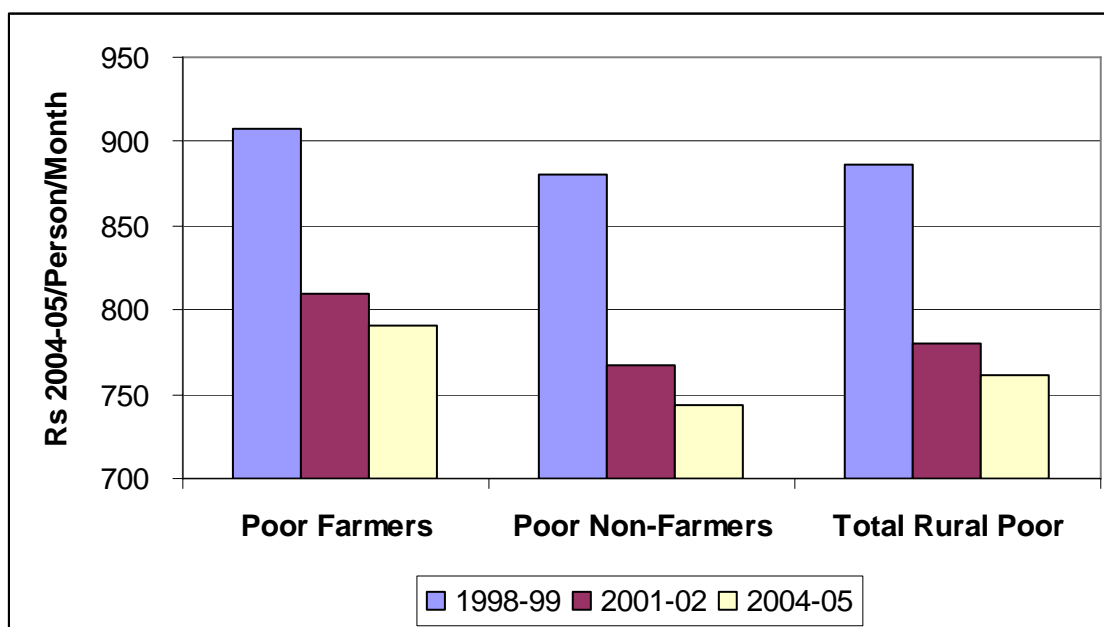


Figure A 2-8. Real Per Capita Household Expenditures of Rural Poor Households in Baluchistan, Pakistan, 1998-99, 2001-02 and 2004-05



3. PROMOTING AGRICULTURAL GROWTH

Pakistan's agricultural sector accounts for about 70 percent of rural household income and nearly one-quarter of national GDP. Raising agricultural productivity is thus crucial for rapid rural growth. This chapter begins with analyses of: total factor productivity in the sector; production constraints; potential for growth in output of major crops and livestock products; and pertinent agricultural technology issues. The next section examines the availability of water and the efficiency of its use for irrigation, which is the biggest constraint to production for much of Pakistan's agriculture. The third section covers existing agricultural markets and trade policies, which are crucial if productivity gains are to be translated into real income gains. The prospects for raising real incomes of the rural poor through agricultural growth are analyzed in section four. The chapter concludes with a brief summary of the main implications for policy.

AGRICULTURAL PRODUCTION AND TECHNOLOGY

Annual agricultural growth in Pakistan averaged 3.7 percent over the roughly four decades from 1959-60 to 2001-2002, although there were wide year-to-year variations. Apart from a period of slow growth in the first half of the 1970s, average agricultural growth exceeded 3.2 percent annually in each quinquennium from 1960 to 2000, due in large part to high growth in the crop sector in the 1970s and 1980s as a result of Green Revolution technology (improved seeds, increased fertilizer use, and irrigation). However, the performance of agriculture (particularly the crop sub-sector), has suffered in recent years because of severe droughts in the country, as well as environmental factors (increased soil salinity and deteriorating groundwater quality).

Pakistan's agricultural sector grew at a modest rate of 2.6 percent per year from 1999-2000 to 2005-06, (0.3 percent per year on a per capita basis, Table 3.1). Real value added of major crops (wheat, basmati and other rice, cotton, sugar cane and maize), which accounted for about two-thirds of agricultural crop GDP, grew by 2.6 percent per year over the period. There have been substantial fluctuations in real crop GDP in recent years due largely to variations in water availability. For example, real crop income fell by 3.6 percent in 2005-06, after it rose by 17.8 percent the previous year due to a record cotton crop (production increased by 42 percent). Total crop GDP grew by 2.3 percent annually, almost entirely due to a 2.1 percent yearly increase in crop GDP/hectare, while the cropped area increased by only 0.2 percent per year. Livestock (which accounts for half of agricultural GDP) grew by an average of 3.5 percent per year (Figure 3.1).

The rapid growth in output during the Green Revolution of the 1970s and 1980s was due both to a large expansion in inputs (seed, fertilizer, irrigation), as well as productivity. Major investments in land, and most importantly in the Pakistan context, in water supply, particularly in the form of tube wells facilitated increases in the net area sown.³⁰ Non-factor input

³⁰ Increases in cropping intensity, (net gross cultivated area divided by net area sown), through multiple-cropping were also made possible, in part, by increases in water availability. In Ali (2005), land use is defined in terms of net area sown, so increases in cropping intensity are captured mainly through increases in land and total factor productivity. In Ali and Byerlee 2002a, land use is measured as a flow variable, (the rental value of the land for a period). By this measure, land use rose rapidly over the past three decades, whereas the measured increase in land and total productivity is smaller.

use (fertilizer, pesticide, tractor services) also expanded rapidly. Nonetheless, total factor productivity in crop agriculture, as well as total agriculture, have increased substantially since about 1970, with estimates ranging from about 1.5 to 2.3 percent per year, depending on the definitions of variables, methodologies and time periods of analysis.³¹

Table 3.1. Agricultural GDP Growth in Pakistan, 1999-2000 to 2005-06*

	2005-06 Value Added (Rs billion)	2005-06 Share Agric. GDP	2005-06 Share Total GDP	2000-06 Growth Rate
Agriculture	1055.2	100.0%	21.6%	2.6%
Major Crops	371.1	35.2%	7.6%	2.8%
Minor Crops	129.9	12.3%	2.7%	0.9%
Livestock	523.5	49.6%	10.7%	3.5%
Fishing	14.2	1.3%	0.3%	-0.9%
Forestry	16.5	1.6%	0.3%	-5.7%
Industry	1270.1	---	26.0%	7.9%
Services	2554.2	---	52.3%	5.9%
GDP (factor cost)	4879.5	---	100.0%	5.6%
Population (000,000)	155.4	---	---	2.1%
Agric GDP/capita (Rs)	6790	---	---	0.5%
Cropped Area (000,000 has)	22.5	---	---	0.2%
Crop GDP/Ha (000 Rs)	22.3	---	---	2.1%

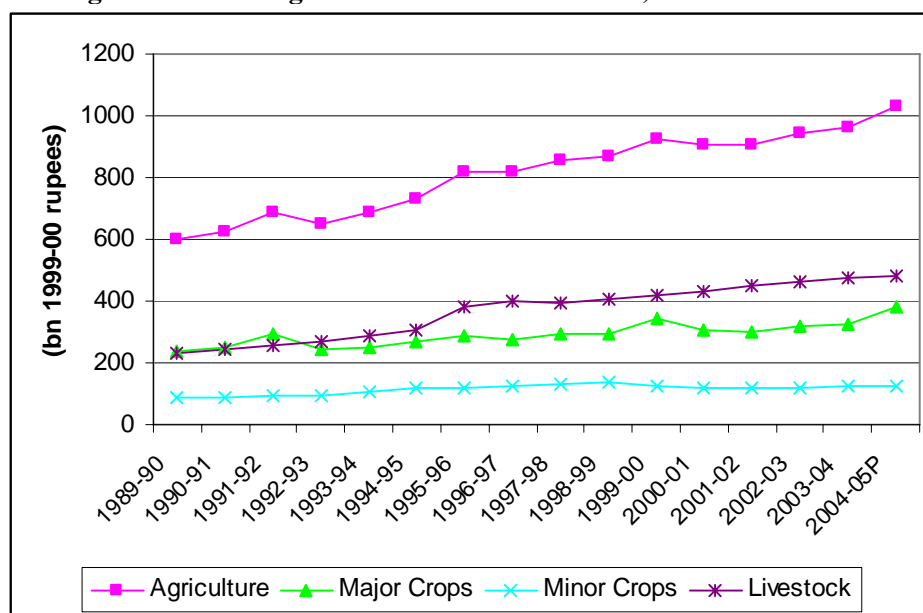
Source: Pakistan Economic Survey 2005-06.

Notes: * 2005-06 data are provisional.

Econometric analysis suggests, however, that since the early 1990s Punjab's total factor productivity (TFP) in the crop sector has at best remained constant, and may even have declined. From 1993-2003 decade, total input use increased by 1.80 percent per year, but output increased by only 1.69 percent per year. Thus, total factor productivity in Punjab crop agriculture actually fell by 0.11 percentage points per year in this period (Table 3.2; Ali and Byerlee 2002, 2004). Severe droughts in several years are part of the explanation. There is also evidence of long-term deterioration in water and soil quality. Reduced effectiveness of agricultural research and extension services also played a role. Labor productivity (measured as a partial factor productivity) also declined, although this could be due to a combination of a deteriorating natural-resource base, drought, and increased underemployment in agriculture due to a slowdown in rural non-farm employment and out-migration.

³¹ For details, see Annexes 2.8, 2.9 and 2.10 of World Bank 2006. *Pakistan: Growth and Export Competitiveness*.

Figure 3.1. Real Agricultural GDP in Pakistan, 1989-90 to 2004-05



Source: Pakistan Economic Survey 2005-06.

Notes: P denotes provisional data

Table 3.2. Estimates of Total Factor Productivity Growth of Agriculture in Punjab, Pakistan

	Output	Crops TFP	TFP/Output	Livestock TFP	Agriculture TFP
Green Revolution, 1966-74	3.23	-1.38	-42.7%	-0.38ns	-1.04
Input-Intensification, 1975-84	2.84	1.40	49.3%	0.71	1.37
Post-Green Revolution, 1985-94	3.27	2.86	87.5%	3.29	3.51
Total Period, 1966-94	3.23	1.26	39.0%	1.25	1.51
1971-81	2.71	0.79	29.2%	----	----
1982-92	3.91	2.86	73.1%	----	----
1993-2003	1.69	-0.11	-6.5%	----	----
1971-2003	3.01	1.54	51.2%	----	----

Source: Ali and Byerlee 2002, 2004.

Notes: ns denotes not significantly different from zero.

Data on output, input and TFP changes across agro-ecological zones in Punjab suggests that fluctuation in cotton yields is a major cause of the stagnation in overall TFP productivity in the crop sector. Output and TFP growth were highest in the 1982-92 period, (3.91 and 1.54 percent, respectively), a period in which output and TFP growth in the wheat-cotton cropping system were 5.10 and 3.96 percent, respectively. Yield growth of cotton in Punjab, overall, in this period was 9.29 percent per year (1981-90). By contrast, in the 1991-2002 period, cotton yields fell by 2.59 percent per year due to virus problems and poor weather. Improving cotton yields through better pest control and improved seeds would likely substantially add to overall TFP growth in Punjab (as well as in northern Sindh).

There are no detailed analyses of productivity growth in other provinces but available data suggest that water availability is the main constraint in Sindh. Wheat output in Sindh has fluctuated in tandem with water availability, particularly during the 1999-2000 to 2001-02 drought years. From 1972 to 1996, canal water releases in Sindh were negatively correlated with rainfall, thus stabilizing total water availability in the province. From 1995 to 2001, however, releases were positively correlated with rainfall, and remained essentially constant at about 50 MAF/year from 1995-98, which were years of normal rainfall, but fell to about 35 MAF in 1999-2001, years of protracted drought that reduced availability of canal water as well. Analysis of average water productivity in Sindh indicates that cereal yields are higher in areas of above average rainfall; however cereal yields are negatively correlated with the availability of canal water. In contrast, data for area under cultivation are positively correlated with both rainfall and availability of canal water.³² As a result, total production of cereals is not highly correlated with rainfall or canal water availability, except during the drought years of 1999-2000 to 2001-02 when wheat production fell by 23 percent relative to the 1996-97 to 1998-99 average.

Nonetheless, there is evidence in Sindh of substantial inefficiency in water use. Net returns to irrigation water use vary widely across crops, which suggests that substantial savings in water would be possible by shifting away from water-intensive ordinary (non-aromatic) rice, which has a net income of 66 Rs/acre-inch and water use of 64 acre-inches, to cotton (with a net income of 361 Rs/acre-inch and water use of only 20 acre-inches), in areas with adequate drainage.

The Crop Sub-Sector

Cropping patterns vary across Pakistan depending on soil type and water availability. In the northern irrigated areas of Punjab, basmati rice is cultivated in the monsoon season (*kharif*), followed by wheat in the winter season (*rabi*). In southern Punjab and northern Sindh, cotton is the major *kharif* crop, typically followed by wheat. Further south, in southern Sindh, where drainage problems inhibit cotton cultivation and warm nighttime temperatures constrain wheat yields, ordinary (non-aromatic) rice is the major crop. Sugar cane, a long-duration, water-intensive crop, is grown almost exclusively on irrigated land. Non-irrigated areas, including hilly and mountainous regions of NWFP and Baluchistan, typically have more diverse cropping patterns that include wheat, maize and pulses.

From 1990-91 to 2005-06, average grain yields continued to increase in Pakistan, albeit at rates below those of the 1980s. The fastest yield gains were those for maize, 4.7 percent per year and basmati rice, 3.6 percent annually (Table 3.3). Yields of wheat (the major crop in Pakistan in terms of both area cultivated—37 percent of total area cultivated in 2003-04 to 2005-06—and in terms of share of agricultural GDP, 14 percent in 2004-05) also increased, by an average of 2.2 percent per year. Yield growth for other crops was generally much slower. Yields of other food grains (mainly millet and sorghum) increased by only 0.6 percent per year; cotton yields increased by only 0.8 percent per year, and yields of sugar cane increased by only 0.9 percent per year.

³² See Damania, R., “Water and Agricultural Productivity in Sindh,” DRAFT, April 2005.

Table 3.3. Pakistan: Area, Yield and Production of Major Crops, 2004-06 (average)

	Area (000,000 ha.)	Area (% growth)	Yield (tons/ha)	Yield (% growth)	Production (000,000 tons)	Production (% growth)
Wheat	8,292	0.19	2.52	2.19	20,937	2.39
Rice	2,534	1.33	2.03	1.92	5,140	3.28
Basmati	1,539	2.51	1.65	3.60	2,538	6.20
Other rice	951	-0.52	2.52	1.45	2,398	0.93
Maize	984	1.01	2.80	4.74	2,751	5.80
Other Food grains	850	-1.37	0.60	0.55	514	-0.68
Gram	1,047	-0.38	0.64	2.08	669	1.70
Sugar cane	982	0.71	49.19	0.92	48,325	1.64
Oilseeds	315	-0.84	0.74	0.80	234	0.22
Cotton	3,093	0.77	0.67	0.79	2,086	1.56
Tobacco	51	-0.09	2.01	1.05	102	0.96
Other	4,506	-0.66	---	---	---	---
Total	22,653	0.15	---	---	---	---

Source: Pakistan Economic Survey 2005-06.

Notes: Growth rates are averages, 1990-91 to 2005-06; 2005-06 data are provisional

Basmati and other rice figures are for data through 2004-05.

Other Food grains consists of bajra, jowar and barley.

Oilseeds includes rapeseed, mustard and sesamum.

Other includes fruits, vegetables and all other crops.

Further increases in wheat yields are possible, but water availability and quality remain major constraints. Between 1998 and 2002, average national wheat yields on irrigated land in Pakistan (2.5 tons/ha) were significantly below average yields in Punjab, India (4.4 tons/ha) and Haryana, also in India (4.0 tons/ha), (Table 3.4). More disaggregated analysis, however, shows that wheat yields in Haryana (4.48 tons/ha) and in the Jhelum canal system in Punjab, Pakistan³³ (4.11 tons/ha) are similar, with high variation in yield across watercourses within a given distributary, especially in Pakistan (Hussain and others 2003). Major inequities in canal-water distribution, as well as significant variability in groundwater quality, are major factors. In systems with adequate canal water, reallocation to areas where groundwater quality is low may substantially increase average yields.

There is considerable potential to increase average cotton yields, which fluctuated between 0.49 and 0.62 tons/hectare from 1992-93 to 2003-04. Good weather and low incidence of pests contributed to a rise in cotton yields in 2004-2005 of 0.20 tons/ha (33 percent) to 0.76 tons/hectare, almost equal to the record yield of 1991-92 (0.77 tons/hectare). Sustained yield increases in yields, however, will require continued successful pest control through the use of improved varieties, pesticides and/or integrated pest-management techniques. Improvements in groundwater quality are also needed to help prevent yield declines during years of low rainfall. Nonetheless, average cotton yields in Pakistan (0.58 tons/ha) are nearly double those of Punjab and Haryana in India (0.31 and 0.32 tons/ha, respectively).

³³ The data are from a sample of 216 farms in the Bhakra canal system in Haryana, India and 218 farms in the lower Jhelum canal system of Punjab, Pakistan in the October 2000 to May 2001 *rabi* season.

Table 3.4. Average Crop Yields in Pakistan and other Countries, 1997-98 to 2001-02

	Wheat	Rice	Cotton	Sugarcane	Maize
Haryana, India	3.99	2.53	0.32	55.74	2.23
Punjab, India	4.39	3.40	0.31	60.96	2.49
Gujarat, India	2.32	1.41	0.26	70.63	1.48
Rajasthan, India	2.54	1.17	0.22	45.36	1.18
Maharashtra, India	1.24	1.60	0.13	84.71	1.47
India (average, 5 states)	2.90	2.02	0.25	63.48	1.77
India (natl. average)	2.67	1.96	0.21	69.95	2.23
Bangladesh	2.19	2.11	---	40.51	2.98
Punjab, Pakistan	2.42	1.50	0.56	44.36	1.91
High yield^a	2.57	1.86	---		
Low yield^b	1.14	1.39	---		
Sindh, Pakistan	2.51	2.82	0.67	56.8	0.55
High yield^a	2.56	2.82	---		
Low yield^b	1.26	---	---		
All Pakistan	2.30	1.94	0.58	47.47	1.72
High yield^a	2.52	2.50	---		
Low yield^b	1.00	1.42	---		
Pakistan/India	86.1%	98.9%	278.0%	67.9%	77.0%
Punjab Pak/Punjab Ind	55.0%	44.1%	180.6%	72.8%	76.7%

Source: India data from CMIE data files; Bangladesh (BBS); Pakistan MINFAL; authors' calculations.

Notes^a High yield wheat figures are for irrigated wheat; high yield rice figures are for ordinary rice.

^b Low yield wheat figures are for non-irrigated wheat; low yield rice figures are for basmati rice.

The most promising strategy for raising agricultural crop incomes in the future, however, is diversification into higher value crops that can maximize returns to scarce factors of production (land and water). Domestic demand for these products will continue to rise rapidly as incomes increase and diets become more diversified, provided marketing channels function efficiently. Capturing these opportunities will require greater investment in agricultural research for higher value crops such as oilseeds,³⁴ vegetables, fruits and livestock; better coordination between research, extension and the private sector through public-private partnerships; and improvements in seed certification and quality control (Box 3.1).

Pakistan is also well-positioned to compete in expanding export markets for citrus, dates and other fruits, particularly in the Middle East. Although production has stagnated in recent years, exports of higher-quality *kinnos* (a type of orange) have increased sharply. This export development has been private sector-led: all marketing of *kinnos* for export is done through sales to brokers or directly to factories, rather than through the domestic wholesale market. To ensure

³⁴ As mentioned below, oilseeds production already benefits from trade protection of processed vegetable oil. Increases in productivity and improved marketing could potentially make vegetable oil from domestic oilseeds competitive with imported vegetable oil even without trade protection, however.

Box 3.1: India's National Agricultural Innovation Project

The National Agricultural Innovation Project (NAIP) is a US \$250 million Government of India project (with \$50 million in financing from the World Bank) designed to help transform India's agricultural research and development efforts from their traditional focus on food self-sufficiency to a more market-oriented approach aimed at poverty alleviation and income generation.

In the last ten years the Indian agricultural sector has undergone considerable change. National food self-sufficiency has been achieved and market demand for fruits, vegetables, meat, eggs, fish, milk, sugar, and edible oils has increased and is encouraging diversification of production. Given that there is limited scope for expansion of area cultivated, enhanced productivity, profitability, and competitiveness will be the main sources of future agricultural growth. While agricultural development has long been supply oriented, its future will be more market driven. The challenge for Indian agriculture is to increase profitability, competitiveness and income earning capacity in a market-driven system for the 200 million poor people dependant on agriculture for their livelihoods.

Activities. NAIP will support the development and implementation of agricultural innovations through collaboration among farmers, the private sector, civil society, and public-sector organizations. The project will be implemented from 2006 through 2012 and is designed around the four components.

- **Indian Council for Agricultural Research (ICAR) as the catalyzing agent for management of change in the Indian National Agricultural Research System (NARS):** ICAR has to provide leadership and empower the NARS and the expanding group of research providers to adapt to emerging challenges. Through this component the ICAR system will also increase its capacity for dialogue and interaction.
- **Research on production to consumption systems:** The specific objective of this component is to establish market-oriented collaborative research for sustainable improvement of selected agricultural production to consumption systems, in recognition of the growing importance of the market.
- **Research on sustainable rural livelihood security:** The core objective of this component is the sustained improvement of incomes and well-being of farm families that have been left behind in development.
- **Basic and strategic research in the frontier areas of agricultural science:** This component is intended to strengthen the capacity of Indian NARS to participate at the forefront of science, in recognition of the need to develop capacity for solving the problems of tomorrow and the need to be a global leader in the field of agricultural research.

NAIP is open to all Indian scientific organizations and will actively engage the private sector, farmer organizations and NGOs in a series of large consortia (defined as "a formal group of likeminded partners that will carry on a given task by sharing a research agenda and research resources as per an agreed work plan") principally selected through competitive processes. NAIP has put in place a series of support mechanisms to ensure that every organization interested to participate will be able to compete.

Source: World Bank 2005e. India National Agricultural Innovation Project. Project Information Document (PID).

quality control, harvesting of *kinnos* for export is done by teams hired directly by brokers or factories. Currently, almost all *kinnos* grown for export are produced on large farms. Increasing the participation of small farmers in *kinno* production for export will likely require creation of some form of farmer organization to help achieve economies of scale in quality control and processing. Public support for research on varietal improvement, which would benefit all *kinno* farmers, may also be warranted.

Faster growth in non-traditional agricultural exports (fruits and vegetables, meat, fish) will require improved capacity to meet Sanitary and Phytosanitary (SPS) standards imposed by importing countries. Pakistan has already faced restrictions on exports of its shrimp because of an inability to meet European Union SPS standards (Box 3.2). Quality and SPS standards issues are likely to be a major constraint on expansion of Pakistan's high-value agricultural exports unless Pakistan develops and implements a coherent strategy (or set of strategies) for quality and SPS management. Organizationally, there is a need to remedy the fragmented, isolated, and non-coordinated capacity of SPS management institutions and regulations by better defining the roles and responsibilities of various agencies involved in SPS management, strengthening technical capacity for risk assessment, and re-institutionalizing early warning and surveillance systems for pests, diseases and contaminants.

Livestock and Poultry

The livestock sub-sector (cattle, dairy, sheep, goats, and poultry), which is dominated by small holders, accounts for half of agricultural GDP, (11 percent of total GDP), and is the fastest growing component of the agricultural sector. From 1989-90 to 2005-06, the average growth rate of the livestock sub-sector was 3.5 percent, outpacing official population growth of 2.0 percent. Because livestock ownership is more evenly spread across rural households than is land ownership or even access to land, productivity gains in livestock are generally more pro-poor than productivity gains of major crops.³⁵ According to the 1996 Livestock Census, the majority of livestock holders are small farmers: 83 percent of households that owned cattle and/or buffaloes owned six or fewer animals. Moreover, there is an important gender dimension to the livestock sector, as rural women play a major role in the care of livestock.³⁶

Production technology and constraints vary according to location and herd size. Households with only two or three animals typically use very few inputs and produce mainly to satisfy family needs. Households with four to six animals typically stall-feed their animals, and often add concentrates to the basic feed of green fodder and straw. This group accounts for the bulk of marketed milk supply. **Rural commercial farms, including specialized dairy farms and mixed crop-livestock farms, typically have more than 40 animals, mostly buffaloes.** Economies of scale and availability of adequate financial resources make it feasible to maintain breeding bulls on such farms. **Peri-urban commercial dairy farms (gawala colonies) typically have herds of 15-50 animals, mostly buffaloes.** These farms face relatively high fodder costs, but benefit from lower marketing costs and in some cases market directly to final consumers.

³⁵ Simulation results suggest that, if multiplier effects on non-farm incomes are included, gains from a 10- percent increase in large livestock production (mainly cattle, goats and dairy products) raise total incomes of small farmers and landless agricultural households by about 10 percent (Dorosh, Niazi and Nazli, 2003).

³⁶ See Ahmad, Asghar and Khan 1993.

Box 3.2: Food Quality and Safety Standards in Pakistan

Pakistan presently lacks a coherent strategy for quality SPS (sanitary and phytosanitary) management in relation to its trade. In the absence of a coherent national strategy, Pakistani firms currently pursue their own strategies, in many cases reacting to events and adopting defensive actions designed to limit potential damage that might ensue from non-compliance with standards. For example, Pakistan banned seafood exports to the EU in March 2005, a step intended to preempt a possible EU ban, and this resulted in losses estimated at between \$10 and \$40 million during the first months of the ban.

Improving food quality and safety in fisheries, horticulture, and meat/livestock is a high priority for Pakistan's export competitiveness. In place of the existing fragmented, isolated, and non-coordinated state of SPS management, a regulatory framework is needed to support Pakistan's international trade objectives and obligations. This framework should:

4. Clearly define and delineate the roles and responsibilities of the different federal and provincial ministries and agencies with respect to SPS management;
5. Strengthen existing technical capacity to administer science-based SPS measures including risk assessment; and
6. (Re-)institutionalize early warning and/or surveillance systems for pests, diseases and contaminants.

In addition, the Consultative Group (CG) on WTO matters and its SPS Committee should be fully activated and a Task Force formed comprising a balanced cross-section of stakeholders.

Institutional changes and capacity-building activities are also needed. Recommended high priority actions for the short-term include:

7. *Strategy and priority setting.* Highlight SPS management constraints and issues, prioritize them and develop an action plan (short term, very high priority);
8. *Raising awareness.* Engage the private sector in dialogue on SPS management capacity issues and develop an SPS information system in the public domain (short-term);
9. *Training on food-safety controls.* Awareness-raising and training on Hazard Analysis and Critical Control Point (HACCP), Good Agricultural Practice (GAP), and Good Manufacturing Practice (GMP) in fish products, horticulture, meat and livestock sectors (short-term);
10. *Implementation of food-safety controls.* Implement and enhance food safety controls in slaughterhouses, fish processing plants, and pack-houses via awareness-raising, certification, surveillance, and auditing (short to medium-term);
11. *Investment in hygiene facilities.* Invest and upgrade hygiene facilities at Karachi Harbor (short to medium-term);
12. *Support for implementation of standards.* Provide support for implementation of HACCP, GAP, GMP and other standards throughout the supply chain through loans and matching grants (medium-term); and
13. *Phytosanitary control measures.* Raise awareness and provide training in practices for animal and plant health control including GAP, Integrated Crop Management (ICM) and Integrated Pest Management (IPM) (medium-term).

Source: World Bank Growth and Competitiveness Report 2006

Milk production is expanding especially rapidly, although most milk continues to be marketed through traditional channels. The supply of fresh milk increased at an average annual growth rate of 11.4 percent between 1971-72 and 2004-05, and by 6.6 percent between the two livestock censuses of 1986 and 1996. Increased tractor use for land preparation is one major factor that has driven increased milk production since the 1970s.³⁷ Because fewer male buffaloes and bullocks are needed for draught purposes, herd composition has changed over time and available feed and fodder are increasingly used for female animals. The milk marketing system in Pakistan continues to be dominated by traditional channels that market unprocessed milk, which constitutes about 90 percent of total milk production. Non-traditional channels, which specialize primarily in marketing processed milk from commercial milk processing firms account for the remaining 10 percent of supply. Of total processed milk, approximately half, or five percent of total supply, is UHT (Ultra Heat Treatment) milk. The remainder is mainly open pasteurized milk sold at milk shops (SDI 2005).

Significant productivity gains for small-holders are feasible through use of improved feeds, better veterinary services, and more efficient marketing channels to help ensure remunerative prices of milk for farmers. Multi-national firms have enjoyed some success in improving the efficiency of marketing channels, but this accounts for only about 10 percent of total milk consumption in Pakistan. One promising alternative mechanism for delivering the requisite technology as well as veterinary and marketing services to small farmers is through cooperatives such as the *Idara-e-Kissan* (IK), also known as Hala Dairy, a vertically integrated dairy cooperative (Box 3.3). The cooperative's output is small relative to the total milk market, however, accounting for only about 0.2 percent of total milk production in Pakistan (or about 2 percent of total pasteurized and UHT milk).

The poultry sector, which accounts for about three percent of the livestock sector, value-added) is expanding rapidly and medium-term prospects are good, due to increased urbanization and rising per capita incomes. Total number of birds and egg production both more than doubled between 1990-01 and 2002-03, increasing by 135 and 145 percent, respectively. Production of maize, used mainly for poultry feed, grew by an annual average of 4.69 percent from 1990-91 to 2004-05; yields grew by an annual average 3.95 percent due to adoption of improved seeds.³⁸ However, Pakistan needs to be prepared to contain outbreaks of poultry disease (including the Asian avian flu), as well as to provide improved general veterinary services.

The timely flow of information regarding outbreaks of disease is crucial to facilitate government response, which may include mandatory culling of flocks in some areas to reduce spread of the disease. To encourage cooperation by farmers and to prevent poultry-owning households and firms from suffering major loss of income, some form of monetary compensation or credit may be necessary. However, as poultry and eggs supply a small share of total animal protein consumed in Pakistan—only 3.6 percent and 2.7 percent, respectively—the nutritional consequences of any outbreak would be limited.

³⁷ A comparison of results from the 1986 and 1996 Livestock Censuses reveals that in the inter census period the number of bullocks reportedly used 'for work' declined 33.5%. Government of Pakistan, (1998). Livestock Census 1996. Punjab. Agriculture Census Organization Statistics Division. Gulberg, Lahore.

³⁸ Production of maize is still only about one-tenth that of wheat, or 2.1 million tons as compared to 19.9 million tons (2003-05 averages).

Box 3.3: Idara-e-Kissan (Hala Dairy)

Idara-e-Kissan is a vertically integrated dairy cooperative with 20,164 members in 519 villages in Punjab (2004 figures). The cooperative is open to any livestock farmer in a target village that owns one buffalo or cow and is able to supply 300 liters of milk during a 6-month period. Unlike traditional cooperatives that own dairy farms, IK collects milk from thousands of geographically dispersed members. Milk is processed in one of the cooperative's milk processing plants and marketed to urban consumers through retail outlets. The cooperative uses profits from its commercial operations to subsidize a package of veterinary and livestock extension services delivered to members through private contractors. In 2004, IK farms produced about 47 million liters of milk, about 0.2 percent of total milk production in Pakistan and about 2 percent of total pasteurized and UHT milk.

According to a 2005 survey of 36 small dairy farmers (3-5 animals per farm) in the Kasur (IK farmers) and Okara (non-IK farmers) districts of Punjab, milk production by IK farmers was 25 percent higher than for non-IK member farms (Table 3.16). Two major factors account for the difference in productivity: higher-quality feed and better veterinary services. IK members fed their animals three times as much cotton seed cake per milk buffalo as did non-IK members. They also benefited from access to veterinary services provided through private contractors; IK farmers also utilized veterinary services at about twice the rate of non-IK farmers. Moreover, cooperative members' satisfaction with these services was higher than non-members' satisfaction with services provided to them by government agencies and the private sector. However, member farmers have not widely adopted other useful innovations promoted by the cooperative, such as balanced feed rations, improved fodder seed, non-traditional fodders, artificial insemination services, and hygienic practices to control disease.

Improved market access is also key to the success of cooperative members. IK farmers received 13 percent higher prices for milk (which was priced according to fat content) than did non-IK members, who sold to local milk collectors (*dhodis*). Total revenue per milk buffalo for IK members was 38 percent higher than for non-members. Thus, despite their costs being 44 percent higher, IK cooperative members enjoyed 34 percent higher net returns per milk buffalo than did non-members (Rs 18,158 versus Rs 13,582), implying a marginal return on cash costs invested of about 112 percent. Sensitivity analysis of these results suggests that increasing market access for non-cooperative members, thereby raising both their milk prices and fodder costs by 20 percent would reduce the difference in net returns between the two groups to only 21 percent and reduce the marginal return on cash costs invested to about 93 percent. However, it must be noted the cooperative does not provide credit; members bear the higher feed costs themselves. However, for farmers without access to credit, higher input costs may hinder adoption of improved feeding practices.

Source: Riaz 2006.

Table 3.5. Costs and Returns for Cooperative Dairy Production, Punjab 2005

	IK farms	Non-IK farms	IK vs. Non-IK % difference
Number of animal units	6.83	6.84	-0.1%
Milk-buffaloes/farm	1.70	1.56	9.0%
Per milk buffalo:			
Milk production (liters/year)	2,003	1,599	25.3%
Price milk (Rs/liter)	14.58	12.85	13.5%
Value of milk production (Rs)	29,209	20,548	42.2%
Value of calves (Rs)	2,383	2,383	0.0%
Total value of production (Rs)	31,592	22,931	37.8%
Costs			
Fodder	8,116	6,669	21.7%
Other feed	5,233	2,604	100.9%
Health treatments	85	75	13.9%
Total costs	13,434	9,348	43.7%
Net returns/milk buffalo	18,158	13,582	33.7%

Source: 2005 field survey of 36 farmers in Kasur (IK farmers) and Okara (non-IK farmers) districts, Punjab, as reported in Riaz 2006.

Notes: IK denotes *Idara-e-Kissan*, a dairy cooperative that markets products under the product name “*Hala Dairy*.”

FACTORS OF PRODUCTION AND AGRICULTURAL INPUTS

Land Distribution and Productivity

Unequal land distribution is a major cause of income inequality in rural Pakistan. Returns to land are estimated to be about half of incomes (value added) from crop agriculture. However, according to the 2000 Agricultural Census, only 37 percent of rural households owned land, and 61 percent of these owned fewer than 5 acres (15 percent of total land). Two percent of households owned 50 acres or more, accounting for 30 percent of total land. The overall Gini coefficient of land ownership in 2000 in Pakistan was 0.66; if rural landless households are included, the Gini coefficient was 0.86. By comparison, Gini coefficients for land ownership are 0.71 in India, 0.42 in Bangladesh, and 0.85 in Brazil.

As Pakistan’s rural population is rising, the number of small farms is increasing over time despite the total area under cultivation being essentially fixed, constrained by access to water). According to Agricultural Census data for 1990, 54.4 percent of farm households owned less than 5 acres (accounting for only 11.4 percent of total area), while 2.8 percent of households owned 50 acres or more (accounting for 34.0 percent of total land). By 2000, 61.2 percent of farm households owned less than 5 acres of land, (accounting for 14.8 percent of total farm area), and 2.0 percent farmers owned 50 or more acres, but these farms accounted for 29.7 percent of total area. In spite of the increase in the number of small farms, the overall Gini coefficient for land ownership in Pakistan remained approximately constant from 1972 to 2000 (Table 3.17).

Table 3.6. Distribution of Land Ownership in Pakistan

	1972	1980	1990	2000
Gini Coefficient	0.66	0.65	0.66	0.66
% of landless households			62.0	63.3
% Share of Holdings <5 acres				
a. Households	47.3	n.a.	54.4	61.2
b. Land	5.4	n.a.	11.4	14.8
% Share of Holdings 50+ acres				
a. Households	3.3	n.a.	2.8	2.0
b. Land	22.4	n.a.	34.0	29.7

Source: Agriculture Census (various issues).

Most empirical evidence indicates that land productivity on large farms in Pakistan is lower than that of small farms, holding other factors constant. For example, plot-level regressions of productivity, correcting for plot characteristics and some household characteristics (such as tractor ownership and number of household workers) suggests a doubling of operated area leads to 10 percent lower wheat yields and 13 percent lower rice yields (World Bank 2002). Farm household income data also show that small farmers have higher net returns per hectare than do large farms. These findings suggest that increases in the share of land cultivated by small-holders would tend to increase overall farm productivity in Pakistan.³⁹

Although, land sales markets are thin in Pakistan,⁴⁰ land rentals in various forms are more common. According to 2001-02 HIES data, 33 percent of land cultivated in 2000 was under some form of tenancy arrangement; 18 percent was under share-cropping. Econometric evidence also suggests that tenure arrangements have a significant impact on productivity. Sharecropper productivity is about 20 percent lower than landowner productivity, holding other factors constant, because there is less incentive for sharecroppers' own-labor inputs (Box 3.6). Though share-cropping is declining as a form of tenancy, the benefits it offers to share-croppers (shared financial risks of crop failure and credit for purchase of inputs) and landowners (greater owner input into management decisions) alike explain its persistence as a tenancy arrangement.

³⁹ Econometric analysis of district-level data in Punjab indicates that districts with higher average farm size tend to have higher productivity than districts with smaller average farm size, however. See Ahmad (2002).

⁴⁰ Land is rarely bought and sold, because high transactions costs, potential disputes about accuracy of land records, land prices in excess of the discounted value of potential agricultural earnings from the land, and lack of access to credit by those without land. The low frequency of land transactions helps perpetuate the highly unequal distribution of land, hampers labor mobility, and reduces returns to family labor.

Box 3.4. Land Tenancy and Productivity

Econometric analysis of the effects of tenancy suggest that the productivity of share-croppers that are relatively unsupervised^a is 18 percent less than productivity of supervised share-croppers and farmers who cultivate their own land.^b Since only 19 percent of land in Pakistan is share-cropped, and an estimated 35 percent of tenants are relatively unsupervised, “unsupervised” tenants account for only about 7 percent of total area cultivated and the effect on total production of major crops is small, only 1.4 percent (Jacoby and Mansuri 2007).

The lack of secure tenancy arrangements also has negative implications for productivity because it disincentivizes tenants to make long-term investments to improve land quality. Econometric analysis of PRHS 2001-02 data, (Jacoby and Mansuri 2006), shows that farmers used less manure on leased plots than on their own plots, reducing yields by about one percent in the first year and a cumulative total of 2-2.5 percent in subsequent years.^c These effects on yields are relatively small, but they may be larger if there is a need for investment in such larger inputs as canal lining and tube wells.

Productivity increases arising out of a shift from share-cropping to fixed rents could lead to substantial benefits for share-croppers; however this is of relatively small benefit for most of the rural poor. An 18 percent increase in productivity of small farm share-croppers resulting from a shift to fixed-rent tenancy would only increase average incomes of small-farm renters (11 percent of the rural population) by 3 percent. Since the size of this productivity shock is small relative to the rural economy, there are only minimal effects on the average incomes of other household groups, even accounting for linkage effects to the rural non-farm economy.

Source: World Bank 2004b. Jacoby and Mansuri (2006, 2007).

^a In this study, tenants were considered to be unsupervised, if during the cropping season there were fewer than ten meetings between the tenant and landlord to discuss management of the plot.

^b Share-cropping arrangements benefit share-croppers by enabling them to share the risk of output fluctuations with the landlord, and also to share the costs of purchased inputs. However, they provide fewer incentives for labor input by the tenant, as output is shared, as well.

^c Application of manure increases yields, by providing additional soil nutrients and by improving soil structure, aeration, water retention, and ability to retain nutrients.

Three major attempts at redistributive land reform in Pakistan have failed (the most recent was in 1977), and land reform has neither political support nor the backing of Islamic religious authorities. Because of these institutional constraints to traditional redistributive land reform, any attempt to increase access to land by poor households must involve a win-win approach. Land purchase schemes that include grant components for the poorest landless households are one option, though fiscal costs could limit the scale of such programs. Policy measures to increase access to land must also include: increased access to credit to enable poor households to purchase land, land taxation to minimize the holding of land for speculative purposes, and measures to improve the efficiency of land sales and rental markets.

Administrative reform of enforcement of existing norms and regulations, including contracts and the rights of tenants, and the lifting of restrictions on rentals would also help improve the functioning of land markets. Simplification of complicated legal procedures that result in long processing delays and a backlog of cases would reduce land transactions costs. Poor households are at a particular disadvantage in cases brought before civil courts, as they often

cannot afford to pursue these cases. Possible steps include: imposing limits on the number of appeals; introducing procedural reforms and alternative conflict resolution mechanisms; and removal of land revenue matters from the jurisdiction of civil courts. Improved information dissemination on land prices and transactions would also enhance efficiency of land markets.

Improvements in land records⁴¹ could also enhance the efficiency of land markets and increase security of tenure. Without secure rights to their land, farmers not only have few incentives to invest, but also will devote fewer resources to defending their rights. Lack of secure title means landowners are less willing to risk renting out land, which in turn reduces access by landless households to land. In addition, banks are reluctant to lend money if land is used as collateral because they do not trust the current recording system. Uncertainty over the validity and enforceability of titles also makes it harder to buy and sell land. Computerization of land records, as tested in a recent pilot project in Punjab, is one option for establishing clearer land records and reducing fraudulent dealings by land administration officials.

Water Availability and Efficiency of Use

Irrigation water is critical for agriculture in most of Pakistan. Massive public investment in dams and canals in the Indus river basin, as well as mainly private investment in wells for groundwater irrigation have been essential for agricultural production. Nearly 80 percent of the cropped area is irrigated, and agriculture is by far the largest user of available water in the country, consuming on average about 95% of available water resources.

Increases in water resource availability for irrigation and the expansion of irrigated areas have played a central role in agricultural growth since the 1960s. The total irrigated area increased by 80 percent between 1960 and 2005, from 10.4 to 18.8 million hectares, mainly due to an expansion in tube well irrigation. In 2004-05, 37 percent of irrigated land was irrigated solely with canal water, 41 percent was irrigated with canal and tube well water, and 18 percent solely with tube well water. Other forms of irrigation, such as wells, canals with wells and tanks accounted for the remaining four percent. About 60 percent of irrigated water available at farm head is provided by canal water; the remaining 40 percent is supplied by groundwater.⁴²

Nearly 97% of irrigated areas are in the Indus basin, the largest contiguous irrigation system in the world. On average, approximately two-thirds of total net water in the Indus basin (102.0 in 147.5 million acre feet) is diverted to canals. Of this total, about 45 percent goes for consumptive use; the remainder is comprised of surplus flows to the estuary (29.4 MAF); system losses, including groundwater recharge (9.9 MAF) and Indus Treaty Allocations to India (8.4 MAF), (Table 3.7).

In some recent years (2001-02 through 2003-04), however, total water flows in the Indus basin have been sharply curtailed by drought, reducing availability of water at the tail end of the system and limiting crop production, as well as necessary drainage (Figure 3.10). *Kharif* season water canal diversions were 3.8 MAF (6 percent) lower than the long-term average. *Rabi* season shortfalls fell much more sharply, by 11.8 MAF (33 percent). Surplus flows were

⁴¹ In Punjab, land disputes are primarily due to fraudulent dealing because the records are not clear and *patwars* (land administration officials) often accept informal payments.

⁴² Government of Pakistan Water Vision 2025 Country Report, cited in World Bank 2003a; Pakistan Public Expenditure Management, Accelerated Development of Water Resources and Irrigated Agriculture, Vol. II.

greatly affected in both seasons, falling by 95 percent in the *kharif* season and by 99 percent in *rabi* season.

Table 3.7. Seasonal Water Flows in the Indus River Basin, 1975-76 to 2003-04

	1975-76 to 2003-04	Drought Years 2000-01 to 2002-03	Drought Years Less Average Flows	Drought Years - Average Flows (as % of Average)
INFLOW				
Western Rivers	140.65	106.02	-34.62	-25%
Eastern Rivers*	6.85	1.11	-5.73	-84%
Total Inflow**	147.49	107.14	-40.36	-27%
OUTFLOW				
Indus Treaty Allocation	8.40	8.40	0.00	0%
Canal Diversions	102.93	87.40	-15.53	-15%
<i>Kharif</i>	66.81	63.05	-3.76	-6%
<i>Rabi</i>	36.12	24.35	-11.77	-33%
System Losses***	1.24	9.65	8.41	678%
Surplus flow	34.93	1.69	-33.23	-95%
<i>Kharif</i>	32.77	1.67	-31.10	-95%
<i>Rabi</i>	2.15	0.02	-2.13	-99%
Total Outflow	147.49	107.14	-40.36	-27%

Source: Pakistan Statistical Yearbook 2004-2005; Pakistan Water Sector Strategy October 2002; Ministry of Water and Power; WAPDA.

Notes: Water flows are expressed in million acre feet (MAF).

*Eastern Rivers Flows data available for 1991-2004, means calculated 1991-2001 and 1991-2004.

**Total Inflow calculated as sum of Mean Western Rivers Inflow and Mean Eastern Rivers Inflow.

***System Losses calculated as Total Mean Outflow - Mean Indus Treaty Allocation - Mean Canal Diversions - Mean Surplus Flow.

Current patterns of water use in Pakistan are causing significant environmental degradation: costs associated with loss of soil fertility due to agricultural soil degradation (soil salinity and erosion) are estimated at Rs 70 billion per year (1.5 percent of total GDP and 6.8 percent of agricultural GDP, based on 2004-05 GDP estimates). In addition to environmental losses, inefficient water use also leads to lower agricultural productivity and incomes. Problems related to seasonal water shortages are particularly acute at the tail end of distributaries throughout the system and at the tail end of the system as a whole (in southern parts of Sindh).⁴³

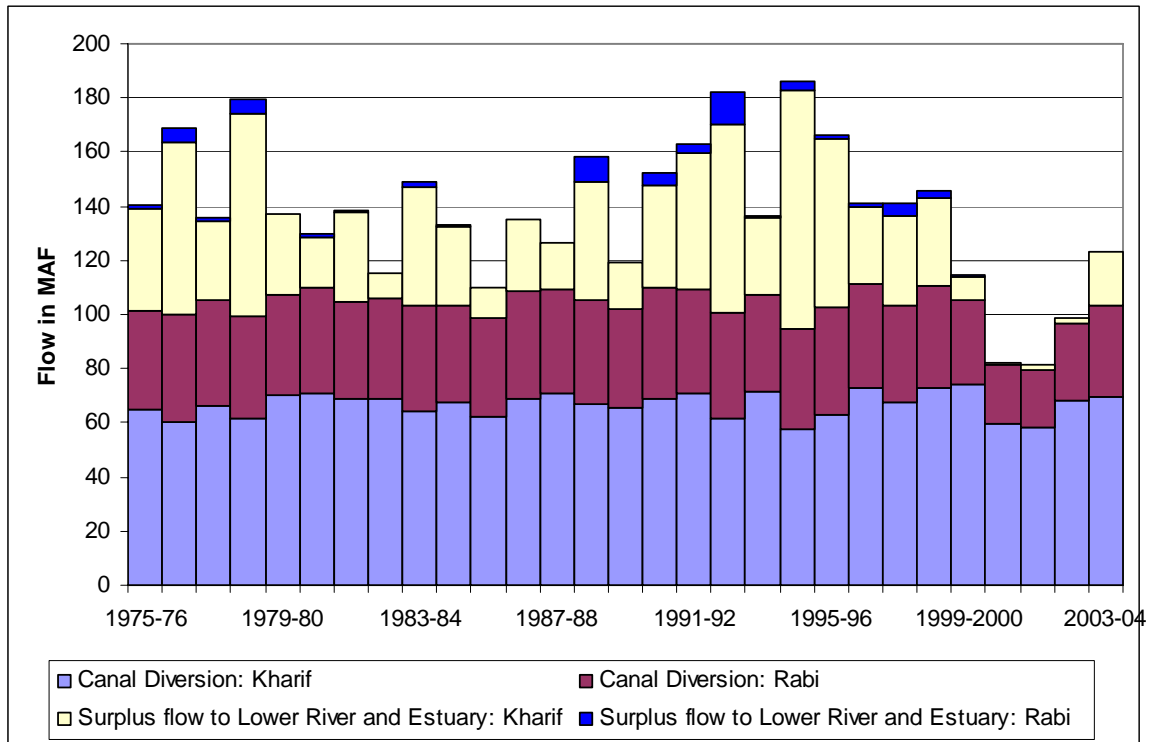
Options to increase availability of irrigation water: There is little storage capacity downstream of the Mangla and Tarbela dams in northern Punjab or water control in Pakistan's run of the river irrigation system. Adding storage capacity in the form of dams will in principle help increase availability of water in the dry season by spreading the flow of water throughout the year.⁴⁴ Nonetheless, even if investments are made immediately to increase storage, capacity will not increase in the next ten years, and is likely to actually decrease somewhat in this period due to silting of existing facilities.⁴⁵

⁴³ See World Bank 2005a Sindh Economic Report.

⁴⁴ In recent years of low rainfall and snow melt, however, Pakistan's existing dams have not been filled to capacity and little Indus water has reached the coast. Additional dams can alleviate but probably not eliminate, the problems of reduced water supply in future drought years.

⁴⁵ However, the major economic benefits of increased storage capacity do not accrue from increased agricultural productivity, but from power generation. About 90 percent of the anticipated benefits from the

Figure.3.2. Annual Indus Flow, Diversion and Escapage by Season, 1975-76 to 2003-04



Source: Pakistan Statistical Yearbook, various years .

Improved Water Delivery: Improvements in water delivery (including investments in drainage, control structures and conveyance mechanisms), better water management (through strengthening of water-course organizations, farmer organizations, area water boards or professional canal management agencies) and more efficient water use at the farm level (crop choice and adoption of water-saving technology) are the most promising short to medium-term strategies (Box 3.7). Inefficiencies in the allocation of water within canal systems cause lower crop productivity at both the head end (due to over-use of water and water-logging) and the tail end (due to water shortages) of canals. Administrative reforms in Sindh that give greater oversight to farmer organizations have enjoyed some success in reducing water theft and improving maintenance of water courses and collection of fees. Punjab has opted for private professional canal management, an alternative mechanism for improving delivery of surface irrigation water services to farmers.

Rationalization of water use: At irrigation water’s full economic cost, cultivation of highly water-intensive crops such as sugar cane is not profitable on much of the land where they are now grown. However, farmers do not pay the full economic costs of water. Instead they receive canal water at rates below the economic opportunity cost of the water and face no charges for groundwater above the financial cost of fuel or electricity for pumping. Given that water is increasingly scarce in Pakistan, a shift from water-intensive crops like sugar cane to less water-intensive crops like oilseeds (sunflower and canola), maize, and vegetables irrigated with drip irrigation techniques, could result in large water savings, increasing water availability

proposed new Basha dam derive from electricity generation. Environmental and social effects at the dam site as well as downstream are important considerations in investment decisions, as well.

downstream and reducing environmental degradation. For example, shifting 60 percent of land under sugar cane cultivation to a maize-wheat rotation or about one-quarter of ordinary rice land to maize would save enough water to supply Karachi's current needs.

One way to encourage the transition to less-intensive water use is to increase water charges (*abiana*) for cultivation of water-intensive crops so that they more closely reflect the economic cost of water. Currently, Sindh levies canal water charges according to crop grown; in Punjab by contrast *abiana* does not vary by crop cultivated.) To minimize problems of non-payment, however, any water-charge increases would need to be accompanied by improvements in service delivery.

Nonetheless, raising water charges to levels approximating the opportunity cost of water is likely to be politically infeasible. An alternative would be the development of markets for tradable water rights such as exist in Chile and Mexico. This would require laws establishing tradable water rates and the strengthening of local institutions to enable them to serve as brokers in water markets. Trade of water rights above the water course level would be limited because of the minimal degree of water control above the water course level (the tail end of the water distribution system), though some transactions conceivably could be brokered by water course associations or water users associations at the irrigation minor level (i.e. higher in the water distribution system).

Projects and programs involving agricultural extension, technical assistance, market development and credit may be needed to ease the transition of farmers and processors to alternative crops and products. For example, if increased water costs reduced the profitability of sugar cane, programs could be developed to reduce the burden of converting processing facilities such as sugar mills for other uses (such as oilseed processing facilities).

Box 3.5. Improving Efficiency of Water Use in Pakistan

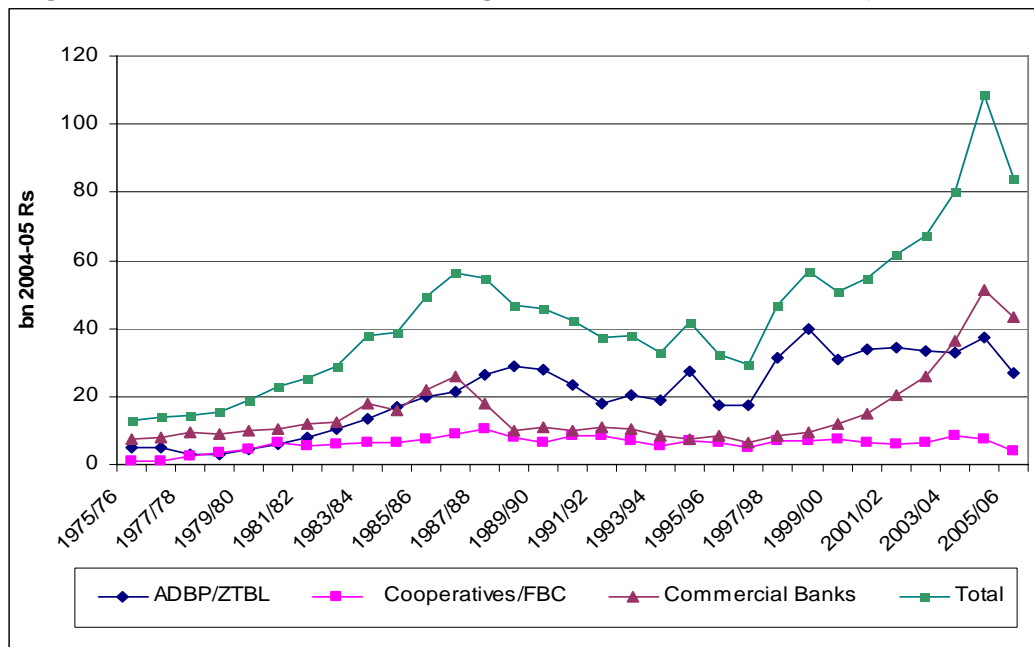
Major improvements in the efficiency and sustainability of water use in Pakistan can be achieved by addressing problems related to asset management, water allocation and service delivery.

- Irrigation Departments need to establish and implement **asset management** plans that set out measures to be taken to ensure:
 - Divesture of assets for activities that can be taken over by the private sector or farmer organizations
 - Operation and maintenance plans including medium-term expenditure frameworks, assignment of financial responsibility to the different actors, measures to reduce establishment costs, pricing policies and cost recovery mechanisms;
- **Service delivery** and **allocation of water** can be improved by devolving water management and canal command operation to Area Water Boards (AWBs) and Farmers Organizations (FOs). FOs should also exercise oversight of:
 - Collection and retention of *abiana*
 - Operation and maintenance at the distributary and branch canal level
 - Improving existing infrastructure
- To improve transparency, Irrigation Departments should publicize information on water flows, expected discharge and allocation of water for each canal, as stipulated in the 1991 Water Accord between the provinces and the federal government.
- Increase availability of irrigation water through
 - Investment in improved drainage, control structures and measures to reduce conveyance and distribution losses, particularly in areas where groundwater quality is poor.
 - Investment in large-scale storage only after careful evaluation of environment, social and economic consequences
- Rationalize water usage and review water charges so that these better reflect opportunity costs of water usage and can be used as an incentive to improve water productivity
 - To minimize problems of non-payment, increases in water charges should be accompanied by improvements in service delivery
- Develop effective markets for entitlements to canal water to make the system more equitable, particularly for farmers whose land is located at the tail end of water courses
 - Enforce the present system of water allocation to facilitate legal tradable water rights at the watercourse, FO and AWB levels
 - Strengthen local institutions (such as Water Course Associations, FOs, AWBs and professional canal management agencies) to increase water productivity and enable them to serve as brokers in water markets
 - Any system of tradable water rights must account for the minimal degree of water control above the water course level in the current Indus basin system caused by the absence of sufficient storage capacity and control structures (gates) to regulate water flows.

Agricultural Credit

Total formal sector rural credit has expanded rapidly since the Zarai Taraqiati Bank Ltd. (ZTBL), (then called the Agriculture Development Bank of Pakistan) reformed its policies in the late 1990s to simplify lending procedures and make credit more accessible to small landowners. Territorial restrictions on commercial bank lending operations were also removed. As a result, total rural credit grew by an average annual rate of 12.0 percent in real terms between 1999-2000 and 2005-06 (Figure 3.3). Commercial credit more than quadrupled in real terms over the same period, increasing its share of total formal credit from an average of only 23 percent in the 1990s to over half of all credit in 2005-06.⁴⁶

Figure 3.3. Growth of Institutional Agricultural Credit in Pakistan (Rs 2004-05 bn)



Source: Malik 1999; Pakistan Economic Survey (various issues).

According to PRHS 2001-02 data, nearly 80 percent of cultivator households participate in the credit market, with two-thirds of total rural credit coming from the informal sector (Table 3.8). Access to institutional credit is highly restricted. Few farmers in the sample fully cover their financial needs through formal credit, and those without land have almost no access to formal-sector credit. Overall, only 11 percent of farmers had obtained formal sector loans, often using these loans to purchase tractors. Informal sector credit is much more widespread. 75 percent of farmers had obtained informal sector loans, including 72 percent of land owners and 84 percent of non-landowners. Total average borrowing by land-owners (including both borrowers and non-borrowers) was Rs 29,500, 65 percent higher than total average borrowing by landless farmers (Rs 17,900).

Agricultural credit (particularly production loans through commercial banks) was highly subsidized from the late 1970s through the mid-1980s. Subsidies on these commercial loans were

⁴⁶ Nonetheless, deposits made to rural and small town banks far outpace advances to the rural sector, indicating a net financial outflow from rural areas. Commercial bank interest rates on deposits that are less than overall rates of inflation represent a tax on savings of rural (and urban) households and firms.

discontinued in the late 1980s, however. Nonetheless, low repayment rates on loans through ADBP/ZTBL continue to constitute an implicit credit subsidy.

As discussed above, because uncertainties about land titles in the current system make banks reluctant to lend money on the basis of these titles, improvements in land administration and land titling could improve access to credit, as well as facilitate more efficient use of land, as well as increase security of tenure.

Table 3.8. Sources of Credit in Pakistan, 2005-06

	Amount (bn Rs)	Share formal	Share rural
Urban (formal)	2005.4	95.7%	n.a.
Rural (formal)	91.2	4.3%	28.0%
ZTBL	29.0	1.4%	8.9%
Domestic Private Banks	11.0	0.5%	3.4%
Cooperatives	4.2	0.2%	1.3%
Commercial Banks	47.0	2.2%	14.4%
Rural (informal)*	185.1	n.a.	67.0%
Total (formal)	2096.6	100.0%	n.a.
Total (rural)	276.2	n.a.	100.0%

Source: Economic Survey of Pakistan 2005-06; PRHS 2001-02.

Notes: *Calculated using the share of informal credit in total rural credit (67%) from PRHS 2001-02. n.a. denotes not applicable.

Other Agricultural Inputs

There have been no direct subsidies on pesticides, seeds and most fertilizers since 1996, but subsidies on surface irrigation water and electricity (in Baluchistan only) remain. The pesticide and seed subsidies were eliminated in 1981-82 and 1982-83, respectively. The subsidy on locally produced fertilizer was eliminated in 1993; a small subsidy on imported fertilizer was eliminated in 1996.⁴⁷ Likewise, a subsidy on tube wells of Rs 16,000 to Rs 20,000 per unit was abolished in 1994-95. Subsidies on canal irrigation (calculated as the difference between revenues collected from farmers as water charges and the cost incurred by the government for operation and maintenance, excluding capital costs) averaged Rs 4.6 billion from 1996-97 to 1999-00, equivalent to 0.8 percent of agricultural GDP.

The price of nitrogenous fertilizer remains substantially below border prices, however, due to subsidies on domestic production.⁴⁸ Domestic prices of both urea and Di-ammonium phosphate (DAP) were on average 25 to 40 percent below import parity in the late 1970s and the 1980s. Since the early 1990s, there has been little or no subsidy on DAP and other major fertilizers. The exception has been urea, for which the domestic price was on average 38 percent below border prices from 1990-91 to 2005-06. Given that the cost of urea is about eight percent of the value of

⁴⁷ All fertilizers now face a 15 percent sales duty, and imported fertilizers also face a 5 percent customs duty.

⁴⁸ Surface irrigation water is also implicitly subsidized as water charges (abiana) are insufficient to cover the cost of maintenance of dam, canals and other water channels. Measurement of the economic value of these subsidies involves assessment of overall investment and maintenance costs, as well as problems attributing these costs to various crops, and is not attempted in this paper.

wheat production during this period according to APCOM cost-of-production estimates, the implicit subsidy on fertilizer was equivalent to only about three percent ($0.08 * 0.38$) of the value of wheat production from 1990-91 through 2005-06. The value of the urea fertilizer subsidy as a share of output values for paddy, cotton and sugar cane respectively is similarly small.

MARKETS AND TRADE POLICIES

Until the mid-1980s, most major agricultural commodities were implicitly taxed through negative indirect effects of overall trade and exchange rate policy that exacerbated the effects of agricultural domestic price interventions. In the 1983-87 period, the direct effects of domestic price and trade policies reduced wheat prices to an average of 25 percent below border prices. The indirect effects of trade and exchange rate policies that led to an appreciation of the real exchange rate further reduced these prices to an average of 42 percent below border prices.⁴⁹ These price disincentives reduced wheat production by an estimated 24 percent (relative to what it would have been during this period). Taking into account price distortions on all crops, total farm incomes were reduced by an estimated 29 percent.⁵⁰

Real exchange rate distortions caused by trade policies have decreased sharply, however, due to major trade liberalization in the 1980s and 1990s. Import tariffs and other restrictions on imports reduce demand and increase supply of importables, and thus lead to an appreciation of the real exchange rate. In the 1980s, the net effect of implicit import (and export) taxes was to cause the real exchange rate to appreciate by an estimated 17 percent compared to its value in the absence of these trade distortions. As a consequence of overall trade policy reforms, however, estimated implicit tariffs (adjusted for export taxes) were reduced to 30 percent in the 1990s and to only 15 percent from 2000 to 2005. Thus, the appreciation in the real exchange rate due to these trade distortions was also reduced, from 17 to 11 to 6 percent over the same period, and the implicit indirect taxation of agricultural tradables was reduced, as well (Dorosh and Salam, 2007).⁵¹

Other factors, however, led to a sharp appreciation of the Pakistan rupee in 2005, resulting in lower incomes for producers of tradable goods. The real exchange rate appreciated by 14 percent between December 2004 and November 2005, due largely to substantial public and private capital inflows accommodated by increases in domestic money supply. This appreciation reduced domestic prices of major tradable agricultural products (such as wheat, cotton, rice, sugar cane, vegetable oils, and citrus fruit for export) and reduced farmers' real incomes. Moreover, an appreciating real exchange rate reduces the competitiveness of Pakistan's high-value fruits, vegetables and livestock products in international markets, thus diminishing growth in a sub-sector crucial for raising agricultural incomes.

In addition to the effects of overall trade and exchange rate policy, commodity-specific trade and pricing policy reforms undertaken for the most part from the late 1980s until the mid-1990s greatly reduced price distortions as measured by divergences between domestic output prices and import or export parity border prices. Significant trade taxes and restrictions on major agricultural products remain only for vegetable oil and powdered milk

⁴⁹ For cotton, this real exchange rate appreciation reduced the protection afforded to domestic cotton production from 177 percent down to 27 percent.

⁵⁰ Dorosh and Valdes 1990; and Hamid, Nabi and Nasim 1990 give similar figures for nominal rates of protection, as well as a detailed account of the policy interventions from 1960 through the mid-1980s.

⁵¹ These calculations use an econometric estimate of the elasticity of the real exchange rate with respect to a change in (one plus) the implicit tariff rate of -0.41 (Dorosh and Valdes 1990).

imports and basmati rice exports. Thus, direct trade and pricing policy distortions, as measured by nominal rates of protection using official exchange rates, have generally declined in absolute magnitude since the early 1980s. Including the effects of exchange-rate distortions, the pattern is clearer: there is a sharp reduction in policy distortions over the past two decades (Table 3.9 and Figure 3.4).

Table 3.9. Nominal Rates of Assistance for Selected Agricultural Products in Pakistan

	<u>Direct Effects</u>			<u>Total Effects</u>		
	1981-1990	1991-2000	2001-2005	1981-1990	1991-2000	2001-2005
Wheat^a	-0.12	-0.05	-0.09	-0.28	-0.19	-0.15
Wheat^{a,b}	-0.03	-0.17	0.03	-0.03	-0.13	0.04
Cotton	0.00	-0.06	0.09	-0.14	-0.09	0.06
Cotton^c	n.a.	-0.14	-0.12	n.a.	-0.15	-0.17
Basmati Paddy	-0.56	-0.30	-0.35	-0.65	-0.39	-0.39
IRRI Paddy	-0.29	-0.29	-0.29	-0.38	-0.29	-0.08
Sugar	1.06	0.70	0.83	0.83	0.65	0.88
Sugar Cane	0.66	0.06	0.37	0.33	0.02	0.44
Vegetable Oil	0.00	0.28	0.27	-0.08	0.25	0.24
Implicit Tariff	---	---	---	0.48	0.32	0.16
RER Effect	---	---	---	0.17	0.12	0.06

Source: Dorosh and Salam (2007).

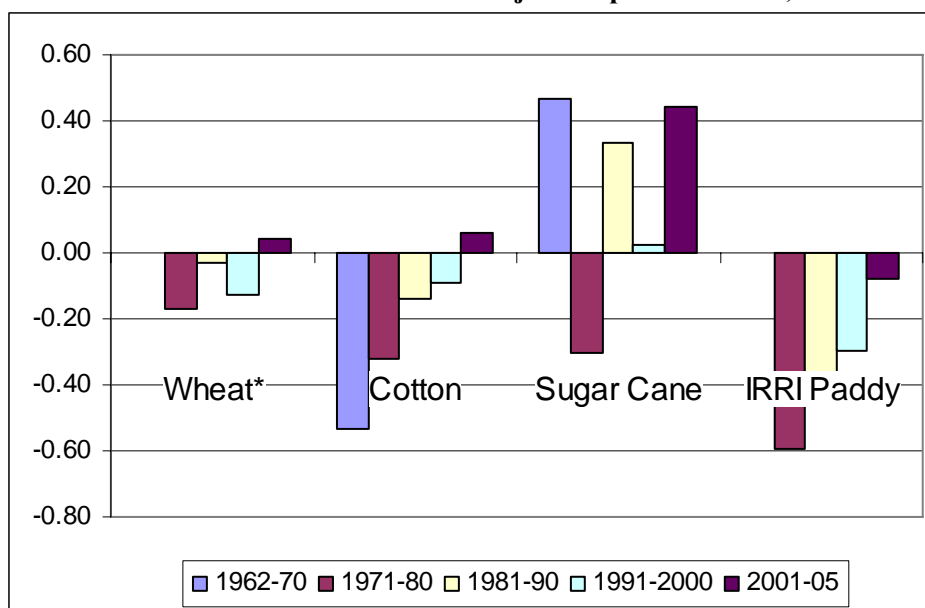
Notes: Paddy, sugar and vegetable oil nominal rates of protection calculated at the wholesale market level. Sugar cane is calculated at mill gate. All other rates are calculated at farm gate.

^a Wheat import parity price calculations assume that Karachi is the central market for imported wheat.

^b Calculated using estimated autarky prices for years in which estimated trade is zero under free trade.

^c Import parity.

Figure. 3.4. Nominal Rates of Assistance for Major Crops in Pakistan, 1961-62 to 2004-05



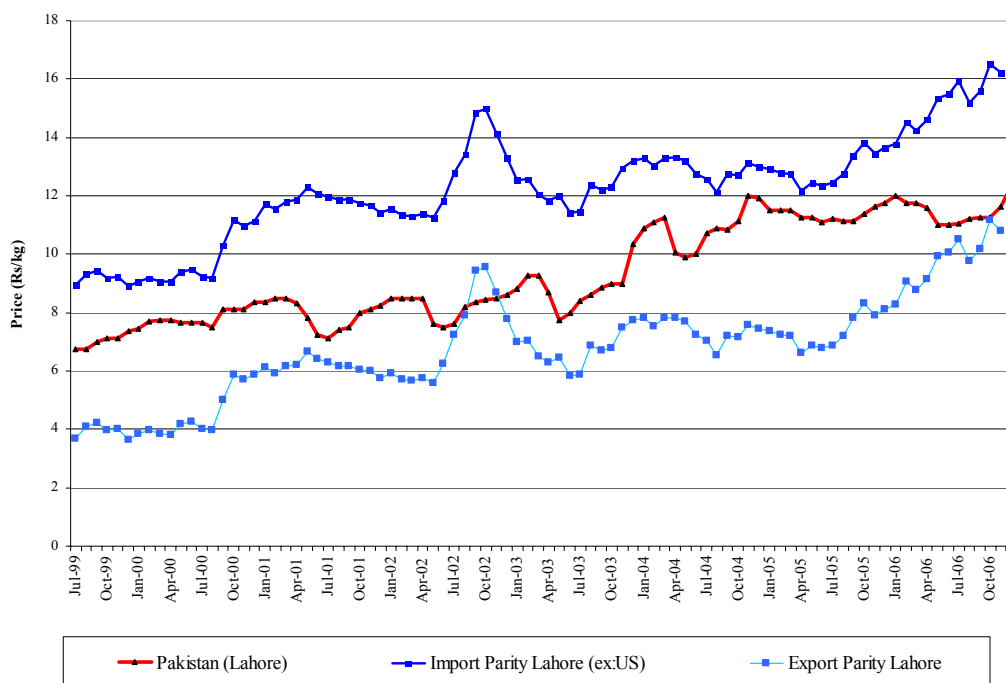
Source: Dorosh and Salam 2007.

Notes: * Calculated using estimated autarky prices for years in which estimated trade is zero under free trade.

Domestic price and trade policies, especially large-scale government imports, have kept farm gate prices of wheat at an average of 15 percent below import parity since the early 1980s. Net government injections in wheat markets (domestic sales less domestic procurement), in most years supplied through government imports, averaged 2.10 and 0.93 million tons in the periods from 1990-91 to 1999-2000 and 2002-03 to 2004-05, respectively. This is equal, respectively, to 12.4 and 5.2 percent of net availability. Only following the record harvest in March/April 2000 and in 2005-06 has the net effect of government interventions been to reduce total net availability and thus raise domestic prices.⁵² Under a free-trade regime, domestic wheat markets would likely have cleared at a price below the import parity level and imports would have been zero. Using estimated autarky (no trade) prices in these years, actual domestic wheat prices were on average 10 percent below no-intervention prices in the 1990-91 to 1999-2000 period, and 3 percent above no-intervention prices in the 2000-01 to 2005-06 period.

Between 2004-05 and during the last six months of 2006, however, an increase in world prices combined with stagnant domestic prices (heavily influenced by government trade and stock as well as stock management policies) to bring down domestic prices from near import parity to near export parity. Average wholesale wheat prices in Lahore were unchanged between these two periods, while the world price of wheat (including estimated cost and freight to Karachi) rose by 25 percent. Combined with an exchange-rate depreciation of 3 percent, import parity in Karachi rose by 28 percent. With this shift in world prices, private sector exports of wheat may be profitable, helping to stabilize domestic prices at export parity levels (Figure 3.5).

Figure.3.5. Pakistan and International Wheat Prices, 2000-2006

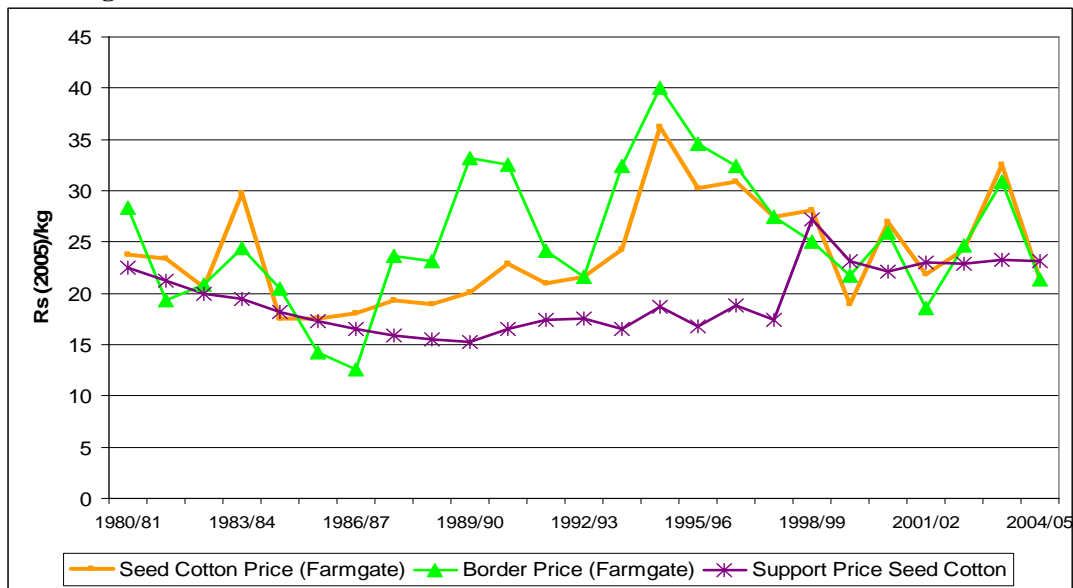


Source: Authors' calculations.

⁵² Without these interventions, domestic prices would have been an estimated 30 percent lower in 2000/01 and 8 percent lower in 2001/02 (Dorosh and Salam, 2007).

Trade-policy distortions in domestic markets for cotton lint are minimal, although seed cotton is protected through import tariffs on vegetable oils that compete with cotton seed oil. Using domestic cotton seed prices in the calculations, estimated average nominal rates of protection for seed cotton were only five percent in 2001-05. The protection provided to cotton seed oil, however, raises the nominal rate of protection for seed cotton to 29 percent in the same period. Moreover, annual price movements suggest that domestic seed cotton prices are essentially determined by world prices of cotton lint and the domestic price of cotton seed (Figure 3.6 and Orden et al. 2005). Simulations using various models of world cotton markets generally suggest that the elimination of cotton subsidies in developed countries would raise world cotton prices by an estimated 11-28 percent.⁵³ If Pakistan’s own cotton policies remain unchanged, domestic cotton lint prices would rise by a similar amount.

Figure 3.6. Pakistan: Real Prices of Seed Cotton, 1980-81 to 2004-05



Source: Orden et al. 2005 and authors’ calculations.

The most significant policy distortions on output prices of agricultural products are the result of import restrictions and tariffs on sugar and vegetable oils. Domestic sugar prices (wholesale in Punjab) have been on average nearly double world prices (import parity) over the last two-and-a-half decades, due mainly to quantitative import restrictions. Estimated protection for sugar cane producers is lower although still significant (it averaged 19 and 58 percent in the 1991-2000 and 2001-05 periods, respectively, a reflection of the high costs of converting sugar cane to refined sugar.⁵⁴ Trade policy also encourages import substitution in vegetable oils with fixed rupee import taxes on vegetable oils averaging an equivalent of 32 percent for soybean oil and 40-48 percent for palm oil. Separate tax rates apply to refined, bleached and de-odorized (RBD) and to crude/refined palm oil. The average *ad valorem* rates quoted here are calculated using the respective fixed rates

⁵³ The range of results of model simulations is based on those reported in Orden et al. 2005, Table 3, with the highest and lowest estimate excluded. The simulations are based on 2000/01 or 2001/02 data. Sumner (2003) estimates that removal of U.S. subsidies alone would raise world prices by 12.6 percent.

⁵⁴ Protection rates for sugar and sugar cane are highly sensitive to assumptions regarding processing costs and marketing margins.

divide by the average price of palm oil imports of all kinds. *Ad valorem* tariffs on whole milk in 2005-06 were 25 percent; the rate on milk powder in 2001-02 was 20 percent.

Moreover, direct government intervention (public sector procurement and sales) in domestic markets has been sharply curtailed for most agricultural products since the mid-1990s. Procurement and sales of rice (both basmati and IRRI) and sugar cane have essentially stopped. Direct intervention in the cotton market has been minimal since 1994 following removal of the export duty on cotton as Pakistan became a net importer; in 2004-05 however, the Trading Corporation of Pakistan bought 270 thousand tons of cotton (11 percent of domestic production) in an effort to boost domestic prices after a bumper crop.⁵⁵

Wheat Policy

The government continues to be substantially involved in wheat markets, however. Provincial governments (mainly Punjab and to a lesser extent Sindh) and PASSCO (Pakistan Agriculture Storage and Supplies Corporation) procure about 20 percent of total wheat production each year. Total procurement of wheat as a share of production (20 percent) in Pakistan is similar to that in India for wheat (25 percent) and rice (23 percent), and significantly higher than that of Bangladesh (10 percent for wheat and 3 percent for rice). The latter, a country with higher levels of poverty appears to have stabilized domestic grain prices and to maintain food security stocks with considerably less recourse to government procurement (Table 3.10).

Large scale government wheat procurement offers little direct benefit to consumers of wheat flour, however, because almost all procured wheat is bought and then sold again to flour millers (at a financial loss to the government) in the same wheat marketing year. Most recently, millers have enjoyed quotas for purchase of government subsidized wheat at below-market prices and have thus been able subsequently to sell wheat flour at market-clearing prices. This has contributed to a large expansion in wheat mills, over-capacity in the milling industry and a large number of mills that operate only when subsidized wheat is available for purchase.

Reducing the volume of domestic procurement (and subsequent intra-annual sales) would directly reduce the wheat subsidy that arises from the disparity between the sale price of government wheat (whether procured locally or domestically) to wheat mills and the full cost of wheat procurement and handling.⁵⁶ Reducing the volume of procured wheat and subsequent intra-annual sales would have little adverse effect on consumers, though, as wheat flour produced from government wheat is typically sold at open market prices. The potential savings from eliminating the wheat subsidy through lower intra-annual domestic procurement and increases in release (sales) prices to flour mills would have increased funds for targeted programs in Punjab in 2002-03 by two-thirds.⁵⁷

⁵⁵ The Trading Corporation of Pakistan (TCP) also bought 35 thousand tons (2 percent of production) in 2001-02 to support prices.

⁵⁶ Raising the sales price relative to the procurement price would also lower total subsidies, but setting the sales (release) price too high relative to open-market prices would induce flour mills to purchase less, as was the case in 2005-06.

⁵⁷ Officially, wheat subsidies in Punjab fell between 2002/03 and 2003/04. Although the procurement price was unchanged, the per kilogram subsidy fell by Rs 1.43 as the cost of incidentals fell by Rs 1.06/kg (from Rs 1.92 /kg to Rs 0.86/kg). Details of how these subsidies are calculated are not published.

Table 3.10. Food Grain Policy in Pakistan, India and Bangladesh, 2001-05

	Pakistan Wheat	India Wheat	India Rice	Bangladesh Wheat	Bangladesh Rice
Production (mn tons)	19.49	70.54	85.72	1.40	25.22
Procurement (mn tons)	3.78	17.73	19.40	0.15	0.82
Share of production	19.5%	25.2%	22.6%	9.6%	3.2%
Stocks (mn tons)	1.30	21.56	18.04	0.26	0.56
Stocks (kg/capita)	3.0	20.6	17.2	1.9	4.0
Distribution channels	Subsidized sales to flour mills	Subsidized sales PDS	Subsidized sales PDS	Targeted Distrib (FFW, etc.)	Targeted Distrib; Sales

Other wheat-policy reforms should accompany changes in procurement to ensure consistency across policies and flexibility to tailor policy to changes in the market (Box 3.6).

Consistent and transparent trade policy with low tariffs to encourage international trade, level playing fields and avoiding marketing restrictions aimed at promoting competitive domestic markets,⁵⁸ and enhanced analytical capacity and information flow are key complements to a policy of reduced government intervention in markets. Because Pakistan's wheat markets are generally well-integrated, using cash instead of food for safety nets would allow welfare objectives to be met while eliminating the need for government procurement. Current average year-end stocks are not excessively large relative to the size of the domestic market, and could play a useful role in emergency preparedness.

⁵⁸ Pakistan took significant steps towards market liberalization and improved efficiency of wheat markets in 2004 and 2005, including liberalization of private sector wheat imports and the removal of restrictions on grain movement in Punjab. This policy represents a dramatic improvement over the policies of 2004, when transport of wheat across districts in Punjab was banned as part of an initiative by the Punjab provincial government to meet its procurement targets.

Box 3.6. Wheat Policy Reforms: Towards a More Efficient Wheat Market in Pakistan

Pakistan's current wheat system involves implicit procurement quantity targets, purchases at a fixed procurement price, and large scale same-year subsidized sales to wheat millers. In years when internal procurement quantity targets, (equivalent to about 20 percent of domestic production), are not met, the government has resorted to raising procurement prices or imposing restrictions on transport of grain. Shifting to a system of minimal market intervention designed to stabilize prices in years of extreme supply shocks, would achieve similar price stabilization results, at the same time significantly reducing costs. A market-oriented system of this sort should include the following components:

1. **Lower levels of government procurement.** The government should set a floor price at which procurement in years of normal or below-normal harvest is equal to minimal levels required to rotate and maintain stocks. (Current average levels of procurement are about four million tons or 20 percent of production.)
2. **Modest government carry-over of stocks as a security measure.** The government should maintain annual carryover stocks equal to current levels (0.5 to 1.0 million tons). Average year end per capita carryover stocks or "strategic reserves" in Pakistan are already relatively small in comparison with other South Asian countries, and do not involve large financial costs.
3. **Liberalization of private sector international trade.** The government should provide clear signals to the private sector regarding tariffs and import restrictions, as well as promoting a level playing field with no special advantages for government agencies (PASSCO, State Trading Corporation of Pakistan, etc.). Experience of other Asian countries, including Afghanistan and Bangladesh, has shown that private sector import trade can supplement domestic supplies and prevent price spikes in years of crop shortfalls.
4. **Cash-based safety nets.** The government should use cash instead of transfers-in-kind or subsidized sales of commodities, to save on administrative and distribution costs.
5. **Promotion of a competitive domestic market.** The government should provide fair access to credit, avoid limits on private storage, and maintain clear and consistent policy signals. Competition among traders and a level playing field can maximize the potential efficiency and social welfare gains from competitive markets, even as individual traders seek to maximize their own profits.
6. **Enhanced analytical capacity and information sharing.** The government should strengthen its capacity to monitor and analyze market developments, and establish systems to more effectively share market and policy change information.

AGRICULTURAL GROWTH LINKAGES AND RURAL POVERTY REDUCTION

Historically, demand linkages ensuing from increased agricultural output and incomes have been the most important mechanism for spurring growth in the rural non-agricultural economy of Pakistan and other developing countries. Increases in agricultural production generally involve increased demand for agricultural inputs, processing and marketing services. Also, as household incomes rise, consumer demand for both urban and rural products and services increases. To the extent that the supply of goods and services is elastic, increases in demand can spur increases in production which in turn further boosts demand. (See Box.3.7.)

Box.3.7. Agricultural Growth and Rural Poverty

Tamil Nadu, India Despite concerns that Green Revolution technology for rice (improved seeds, increased fertilizer use and irrigation) would lead to increased income inequality, most rural household groups benefited from increased rice production in the 1970s and early 1980s (Hazell and Ramasamy, eds., 1991). Household surveys of farmers indicated that, although the first adopters of the rice technology tended to be larger farmers, by the early 1980s small farmers in villages with access to irrigation had adopted the new technologies at the same rate as large farmers. Land distribution remained essentially unchanged, and agricultural wage earnings for agricultural laborers increased although real agricultural wage rates did not increase.

Moreover, increased rice production led to substantial rural growth linkages, adding an additional 0.87 rupees of value added for every 1 rupee of value added from additional rice production. Half of these multiplier effects were due to increased demand for agricultural inputs, marketing and processing services; the remainder derived from increased consumer demands as household incomes rose.

Survey results showed that real incomes of small paddy farmers and landless laborers rose by 90 and 125 percent, respectively, between 1973-74 and 1983-84. Incomes of non-agricultural households also rose by 55 percent, due in part to the growth linkage effects ensuing from agricultural growth. Large paddy farmers' real incomes rose only 18 percent, due to increased fertilizer and labor costs. Notably, non-paddy farmers with no access to irrigated land experienced real income gains of only 17 percent.

Similarly, analysis of state-level data on growth and poverty in India (Datt and Ravallion 1998) shows that agricultural productivity growth from 1958-1994 played a major role in reducing poverty. During this period, agricultural output per acre of net sown area grew by 2.91 percent per year, contributing to higher real wages for agricultural laborers (which grew by 2.84 percent annually) and a decline in the real price of food. The price of food relative to agricultural laborers' consumer price index fell by 0.15 percent per year from 1976-94, after having increased by 0.62 percent per year from 1958-75. Higher farm yields for small producers also contributed directly to their incomes, through increased value of output and indirectly through increased employment.

In Pakistan because much of the value added in agriculture accrues to land (in the form of implicit or explicit rents) and because land distribution is highly skewed, much of the rural population has relatively little agricultural income. Medium and large land owners (those with 12.5 acres or more) account for 10 percent of agricultural households and receive an estimated 32 percent of agricultural incomes. However, agricultural incomes (including livestock) generally account for only 56 percent of total income for agricultural households, which constitute 41 percent of Pakistan's total population. Including rural non-agricultural households (31 percent of the national population), the share of agricultural incomes in total rural incomes is only 37 percent (Table 3.11).

Table 3.11. Rural Agricultural Incomes in Pakistan

	<i>PRHS</i>	<i>PRHS</i>	<i>SAM*</i>	<i>SAM*</i>
	<i>Agric Inc</i>	<i>Agric Inc</i>	<i>Agric Inc</i>	<i>Agric Inc</i>
	<i>Per Capita</i>	<i>Share</i>	<i>Per Capita</i>	<i>Share</i>
	<i>('000 Rs)</i>	<i>(percent)</i>	<i>('000 Rs)</i>	<i>(percent)</i>
Medium and Large Farms	15.7	83.5	29.9	57.2
Small Farms	6.1	67.9	8.6	54.8
Landless Farmers	7.2	87.7	5.3	59.7
Rural Agric Workers	2.2	53.1	5.5	53.1
Rural Non-Farm Non-Poor	0.3	1.9	0.1	0.4
Rural Non-Farm Poor	0.2	6.3	0.2	4.5
Total Rural	6.1	69.7	5.6	37.2
Rural Agric Households	7.1	74.8	9.6	55.9

Source: Pakistan SAM 2001-02; Pakistan Rural Household Survey 2001-02.

Notes: * denotes Social Accounting Matrix

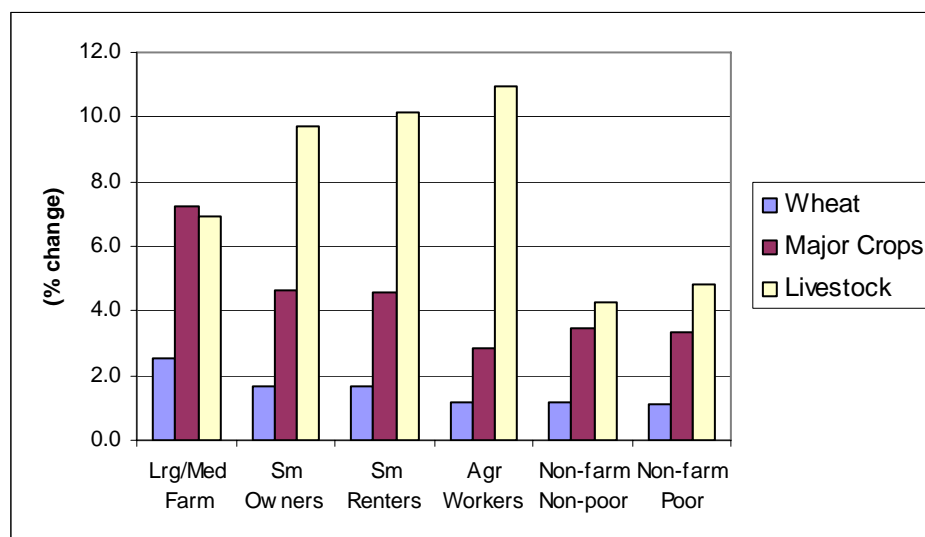
The extent to which non-agricultural households gain from agricultural growth is determined by the magnitude of growth linkage effects. These linkage effects can be estimated using a semi-input-output model, based on a social accounting matrix (SAM) for Pakistan that includes disaggregated information on production activities, returns to factors of production (e.g. land, labor and capital), supply and demand of goods and services, and incomes and expenditures of households and other institutions. The model assumes that output of tradable goods (major crops, cattle products, most industrial products) is inelastic, and does not expand due to increases in demand. For these products, increased demand results in increased net imports. For elastically supplied products, (minor crops, poultry, and services), increased demand is assumed to induce increases in output.⁵⁹

Simulation results of a 10 percent increase in the output of all major crops (wheat, basmati and IRRI rice, cotton and sugar cane) **suggest that the largest gains of increased agricultural crop production accrue to large and medium land owners, whose incomes rise by 7.2 percent.** Incomes of small farm owners and pure tenants also rise by about 4.6 percent. Due to multiplier effects, incomes of non-farm rural household groups also rise by 3.4 percent on average. The poorest rural household groups (agricultural laborers and rural non-farm poor (29 percent of the rural population) reap only 6.7 percent of the total income gains, and their incomes rise by only 2.6-4.1 percent. Much of the income gains accrue to the owners of capital in both rural and urban areas (Figure.3.7).⁶⁰

⁵⁹ Correct classification of a sector as elastic in supply is crucial to the model results. Note also that the model uses average input-output, value added and factor payment coefficients derived directly from the SAM, though consumption parameters are based on econometrically estimated income elasticities of demand. Thus, the simulation analysis assumes there is no change in the structure of Pakistan's land distribution and factor payments. For details, see Dorosh, Niazi and Nazli (2003).

1. ⁶⁰ The simulations show the average income gains for the various household groups. If non-agricultural labor incomes are concentrated among only a segment of rural non-farm poor households, the income gains of this segment of households will be larger, (and the gains to other rural non-farm poor households correspondingly smaller).

Figure.3.7. Simulation Results of a 10-percent Output Shock to Wheat, All Major Crops and Livestock in Pakistan



Source: Dorosh, Niazi and Nazli 2003.

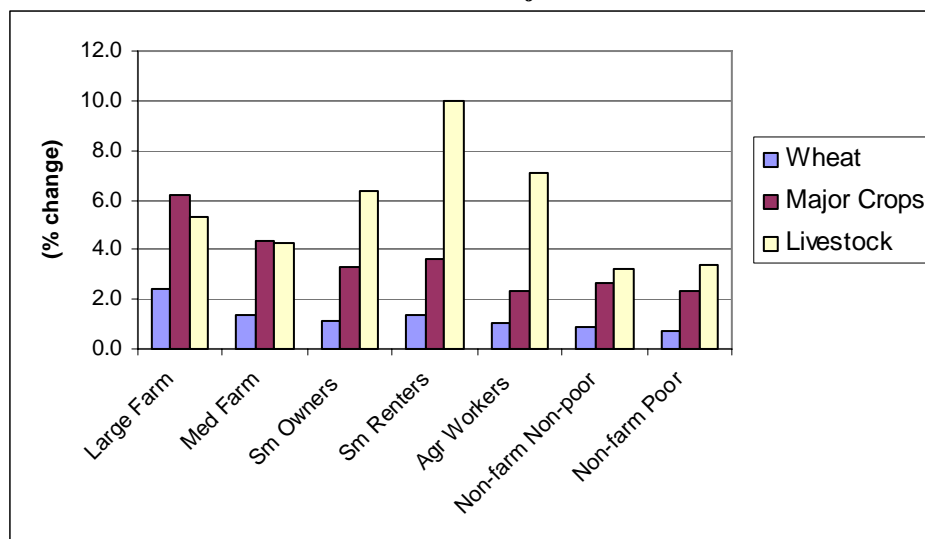
Simulations using a disaggregated SAM that separates activities and households in Punjab produce similar results. A 10 percent increase in the output of all major crops raises overall incomes by 2.5 percent and large and medium land owners' incomes by 6.2 and 4.3 percent, respectively. Incomes of small farm owners and pure tenants in Punjab rise by 3.3 and 3.7 percent, respectively. Multiplier effects raise incomes of non-farm rural non-poor household groups in Punjab by 2.7 percent, on average, and the rural non-farm poor households by only 2.3 percent (Figure.3.8).

Gains from a 10 percent increase in large livestock production (mainly cattle, goats and dairy products) are more evenly spread out given the distribution of livestock ownership. A 10 percent increase in national livestock production results in an overall income gain of 4.5 percent; incomes of small farmers and landless agricultural households (both of which also have significant livestock income) rise by 9.7 and 10.9 percent, respectively. A 10 percent increase in livestock production in Punjab only raises overall incomes in the province by 3.4 percent. Incomes of Punjab small farm owners, small farm renters, and landless agricultural households (the latter of which also have significant livestock income) rise by 6.4, 10.0 and 7.1 percent, respectively.

Thus, the simulations show that agricultural growth has substantial benefits for low income farmers and tenants (approximately 37 percent of the rural poor), but another source of demand (besides agricultural growth linkages) is needed to rapidly raise the earnings of the rural non-farm sector. The limited impact of agricultural growth on incomes of the rural non-farm poor is the result of two major factors: segmentation of Pakistan's agricultural labor market; and agriculture's declining contribution to both total GDP and rural household incomes.

Because much crop farm labor (about 80 percent) is own-family labor, most of the direct gains in labor earnings from increased agricultural output accrue to farm households, not to hired agricultural workers. As a result, incomes of landless agricultural workers (10 percent of the rural poor) rise only moderately in these scenarios.

Figure.3.8. Simulation Results of a 10-percent Output Shock to Wheat, All Major Crops and Livestock in Punjab, Pakistan



Source: Dorosh, Niazi and Nazli, (2003).

Moreover, because over time, agriculture’s share in both the rural and national economies has shrunk, multiplier effects originating from the agricultural sector have a smaller impact on the non-agricultural economy.⁶¹ Closer integration with the urban economy also reduces consumption linkages within the rural economy, as rural households spend more of their incomes outside of rural areas or on goods produced outside rural areas. Both these changes are typical patterns in economic development.

The implication is that growth linkage effects have a smaller impact on GDP growth and rural poverty reduction today than they did in the past, and that an additional source of demand is needed for rapid growth of the rural non-farm sector. Agricultural growth still has a positive impact on rural poor incomes, but this is smaller, relative to the size of the economy, than it was three decades ago. Even with agricultural growth of 3.9 percent per year (the historical average from 1975 to 1990, a period of rapid real agricultural GDP growth) and the higher growth multiplier of 2.5, non-agricultural income growth induced through multiplier effects would be only about 2.9 percent, implying a per capita growth rate of less than 1.0 percent per year.

⁶¹ The share of major crops in total GDP in Pakistan has fallen dramatically, from 0.234 in 1970 to 0.091 in 2000. Therefore, the direct effect of a 10 percent gain in major crop production is smaller: it was equivalent to 2.3% of GDP in 1970, but only 0.9% of GDP in 2000. Moreover, assuming a constant value-added multiplier of 1.5, the total effects (including multiplier effects) on the rest of the economy are also smaller (4.6% of GDP in 1970 compared with 1.5% of GDP in 2000), (Dorosh, Niazi and Nazli 2003).

POLICY IMPLICATIONS

Agricultural growth in Pakistan throughout most of the last three decades has depended to a large extent on the major crops (wheat, rice, cotton and sugarcane). Although there is still scope for production increases of these crops, future increases in agricultural productivity and rural incomes are likely to be driven by diversification into high-value crops and livestock.

Research and extension services need to be restructured to meet the needs of a more diverse agriculture sector, including provision of region-specific information packages. Facilitating new contracting arrangements and investment by supermarkets will also facilitate marketing of high value fruits, vegetables and animal products.

Investment in irrigation and drainage, in tandem with reform of irrigation management are also crucial to arrest environmental degradation, especially in some major irrigated areas of Punjab and Sindh. Expanded use of water-conservation technologies such as drip irrigation, can increase the efficiency of use of scarce available water.

Finally, more resources are needed for the provision of research, extension and veterinary services for livestock, particularly for larger animals. The poultry sector is already expanding rapidly, spurring substantial growth in maize production (a major feed) and in poultry and egg production. Productivity gains in the livestock sector are especially important for pro-poor rural income growth, as livestock ownership in rural Pakistan is distributed far more equitably than is land ownership.

4 GROWTH IN THE RURAL NON-FARM ECONOMY

As discussed in the previous chapter, substantial agricultural growth alone is insufficient to achieve rapid reduction in rural poverty. This is so because agricultural earnings accrue mainly to those with access to the key factors of production (land and water) and because growth linkage effects on incomes in the rural non-agricultural sector are small relative to the number of households deriving incomes from this sector. Thus, increasing rural non-farm incomes, in addition to those arising from growth linkages associated with increases in agricultural incomes, is critical for rapid rural poverty reduction.

This chapter examines the structure of the rural non-farm economy and the constraints it faces. We utilize two sources of data for the analysis. In presenting an overview of the rural non-farm economy and the characteristics of households that derive their incomes from it, we use data from national household surveys and focus on households residing in rural areas (using the Federal Bureau of Statistics definition of rural areas based on administrative boundaries and population). The analysis of the economic characteristics and constraints of the non-farm sector, however, is based on data from a separate rural investment climate survey of enterprises (including household-based enterprises). Because many of the enterprises that reap the benefits of agricultural growth linkages and that employ members of rural households are located in small towns, the survey covers both villages (rural areas as defined by the Federal Bureau of Statistics) and small towns with populations of less than 100,000 people.

STRUCTURE OF RURAL NON-FARM ENTERPRISES

Non-farm enterprises' contribution to income and employment

There are no precise figures on the number of rural non-farm enterprises in Pakistan, but extrapolation from recent surveys suggests there are about 3.8 million rural non-farm enterprises.⁶² About 70 percent of these are located in Punjab, 15 percent in NWFP and 10 percent in Sindh. Data from the 2004-05 PSLM survey indicates that about 29 percent of rural households in Pakistan operate a non-farm enterprise (Table 4.1). The rate of enterprise ownership varies from about 19 percent in rural Sindh to 34 percent in rural Punjab.

Table 4.1. Percentage of Rural Households in Pakistan that Own Shops and/or other Businesses

Expenditure Quintile	Pakistan	Punjab	Sindh	NWFP
Poorest Quintile	24%	28%	14%	20%
Quintile 2	27%	33%	18%	24%
Quintile 3	29%	35%	16%	30%
Quintile 4	30%	35%	20%	33%
Quintile 5	37%	41%	24%	45%
Total	29%	34%	19%	30%

Source: Authors' calculations based on PSLM 2004-2005.

⁶² This estimate is based on PSLM 2004/2005 data and utilizes the Federal Bureau of Statistics definition of rural areas that does not include small towns. Note that these PSLM-based estimates are considerably higher than estimates for rural households those based on HIES 2001/02, which collected information on households with enterprises of fewer than nine workers. HIES data indicate about 2.5 million rural non-farm enterprises.

While wealthier households are more likely to own non-farm enterprises, poorer households are reliant on employment and thus for a significant share of household income in these enterprises. In all three provinces, enterprise ownership tends to increase monotonically with wealth. For instance, in rural NWFP 45 percent of the wealthiest households own and operate a non-farm enterprise, compared to 20 percent of the poorest households (Table 4.1). About 27 percent of the income of the poorest households in rural Pakistan comes from non-agricultural wages (Table 4.3). In absolute terms, the poorest rural households earn three times as much income from non-agricultural wage employment as from agricultural wage employment.

Almost 40 percent of the rural working population in Pakistan is either self-employed (13 percent) or employed as wage or salaried workers in non-farm activities (25 percent) (PSLM 2004-05).⁶³ Nearly half of all self-employed persons are engaged in wholesale or retail trade (. The construction and social/personal services sectors are major sources of non-agricultural wage employment and account for roughly 25 percent and 40 percent of paid non-agricultural work, respectively. Note that this non-farm employment need not take place within rural areas (as defined by the Federal Bureau of Statistics), but may take place in near-by small towns (or even larger cities).

Table 4.2. Proportion of the Rural Working Population in Pakistan (Over 10 Years of age) that is Self-employed or a Paid Non-Agricultural Employee

Industry	Pakistan		Punjab		Sindh		NWFP	
	Self-employed persons as % of Total Working Population	Non-Agricultural workers as % of Total Working Population	Self-employed persons as % of Total Working Population	Non-Agricultural workers as % of Total Working Population	Self-employed persons as % of Total Working Population	Non-Agricultural workers as % of Total Working Population	Self-employed persons as % of Total Working Population	Non-Agricultural workers as % of Total Working Population
Mining & Quarrying	0.0%	0.2%	0.0%	0.1%	0.0%	0.2%	0.0%	0.4%
Manufacturing	1.4%	3.2%	2.0%	4.4%	0.4%	1.5%	0.7%	1.8%
Electricity	0.1%	0.3%	0.1%	0.3%	0.0%	0.5%	0.1%	0.5%
Construction	0.4%	6.1%	0.3%	5.9%	0.4%	3.9%	0.5%	10.7%
Wholesale & Retail Trade	6.2%	1.7%	6.3%	1.5%	4.6%	1.4%	8.5%	2.6%
Transport & Storage	1.2%	2.1%	1.2%	1.5%	0.4%	1.8%	2.0%	3.9%
Real Estate, Insurance	0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%
Social & Personal Services	3.3%	9.6%	4.4%	9.2%	1.4%	9.2%	3.1%	11.7%
Other	0.6%	2.1%	0.7%	1.9%	0.4%	2.1%	0.4%	2.9%
Total	13.2%	25.5%	15.3%	24.9%	7.6%	20.7%	15.4%	34.5%

Source: Authors' calculations based on PSLM 2004-2005..

Income from self-employment and wage employment in non-agricultural activities accounts for 30 percent of income for the average household (Table 4.3). The relative importance of non-farm incomes varies across provinces, with total non-farm income accounting for 67 percent of household income in rural NWFP, 43 percent in rural Punjab and 32 percent in rural Sindh. Both poor and wealthy rural households are highly dependent on non-farm income. The poorest households are relatively more dependent on non-farm self-employment and wage incomes than richer households.

⁶³ These estimates correspond closely to others from the Pakistan Labor Force Survey 2001-02. In 2001-02 nearly 40 percent of the rural labor force was employed in the manufacturing, construction, wholesale and retail trade, transport and communication and social-services sectors (Malik 2005).

Table 4.3. Annual Household Non-farm Income Shares by Expenditure Quintiles in Rural Pakistan (in 2001-02 Rs)

Expenditure Quintile	Poorest Quintile	2	3	4	5	All	Average Income (Rs)
Punjab							
Agricultural Wages	6%	4%	2%	1%	0%	2%	1,489
Total Farm (excl. agric. wages)	38%	47%	53%	55%	64%	55%	40,175
Net Business Income	15%	12%	11%	11%	9%	11%	7,864
Non-agricultural Wages	26%	21%	20%	17%	12%	17%	12,738
Total Non-farm	57%	48%	45%	44%	36%	43%	31,246
Sindh							
Agricultural Wages	24%	17%	8%	4%	2%	7%	5,791
Total Farm (excl. agric. wages)	42%	52%	61%	63%	67%	61%	52,865
Net Business Income	3%	4%	4%	5%	5%	5%	4,139
Non-agricultural Wages	28%	24%	26%	25%	19%	23%	19,809
Total Non-farm	34%	31%	32%	34%	31%	32%	27,587
NWFP							
Agricultural Wages	2%	2%	1%	1%	0%	1%	481
Total Farm (excl. agric. wages)	24%	30%	36%	36%	30%	32%	21,882
Net Business Income	12%	10%	12%	16%	16%	14%	9,761
Non-agricultural Wages	28%	25%	23%	19%	20%	21%	14,444
Total Non-farm	75%	68%	63%	63%	70%	67%	45,676
Pakistan							
Agricultural Wages	9%	7%	4%	2%	1%	3%	2,285
Total Farm (excl. agric. wages)	37%	45%	51%	53%	58%	52%	33,576
Net Business Income	12%	10%	9%	10%	9%	10%	7,451
Non-agricultural Wages	27%	24%	23%	21%	16%	20%	15,247
Total Non-farm	54%	48%	45%	45%	41%	45%	34,005

Source: Authors' calculations based on HIES 2001-2002; PIHS 2001-2002.

A Profile of Pakistan's Rural Non-farm Enterprises

As in other South Asian countries, the non-farm sector in both rural villages and small towns in Pakistan primarily consists of family based micro-enterprises. According to data from the Pakistan Rural Investment Climate (RIC) Survey, the average small town enterprise employed roughly two workers, and village enterprises employed about 1.7 workers), including paid and un-paid family workers and hired workers. Only three percent of non-farm enterprises in small towns and one percent in villages had more than five workers. The vast majority of labor in small town and village enterprises is family workers; only 23 percent of enterprises in small towns and 11 percent in villages report hiring non-family workers.

Trading enterprises dominate in Pakistan's villages and small towns. About 57 percent of small town and village enterprises are engaged in wholesale or retail trade, followed by around 31 percent in services; the remainder are in production/manufacturing (Table 4.4).⁶⁴ The very thin

⁶⁴ These estimates of the sectoral distribution of enterprises from the RIC survey are very similar to those from PSLM Round 1 2004/05. According to PSLM, about 47 percent of people self-employed in non-agricultural activities were engaged in wholesale or retail trade and about 34 percent were in the

manufacturing base in small towns and villages is noteworthy, particularly by comparison to the rural non-farm sector in other South Asian countries. In Sri Lanka, production-oriented firms account for 40 percent of rural enterprises, while in Bangladesh manufacturing and construction account for about 27 percent of non-farm enterprises (ADB and World Bank 2004; World Bank 2005).⁶⁵ Agro-processing enterprises, primarily flour mills, bakeries and sweet shops account for about 32 percent of manufacturing enterprises in small towns and 36 percent in rural villages.⁶⁶ Typical service-sector businesses are repair shops for cycles, vehicles and small electronics; hotels and restaurants; tailors; and hairdressers and barbers. While the rural sectoral composition of enterprises is quite similar in all three provinces, small towns in Punjab have significantly more manufacturing and service enterprises than do small towns in Sindh and NWFP.

The average enterprise is fairly young, and 50 percent have been in operation for less than 5 years, reflecting high startup and closure rates. Manufacturing/production enterprises tend to be older than service and trading enterprises. The average age of a production enterprise in the sample is around 16 years for small-town firms and 11 years for firms in villages; the average age of both village and small town trading and services enterprises is about eight years. About 43 percent of production enterprises have been in operation for more than 10 years, compared to 29 percent of trading enterprises and 25 percent of service enterprises.

The vast majority of owners had established their own businesses; about nine percent had inherited businesses and another five percent reported purchasing their business. On average enterprise owners had about three years of industry experience prior to establishing or buying an enterprise. Owners acquired relevant management and technical skills in a number of different ways. Just under half of business owners (42 percent) acquired skills from relatives and friends; 20 percent were self-taught; and about the same proportion had gained experience from prior employment. Most enterprises were established/purchased using funds borrowed from family and friends, or income from non-farm activities (Table 4.6).

The predominant form of ownership is sole proprietorship, and 80 percent of businesses are owner-managed. Most of these enterprises can be considered informal businesses as they have fewer than 10 workers, and very few are registered or pay taxes. Although rates of registration are generally low, non-farm enterprises in Punjab are more likely to be registered than those in Sindh or NWFP. Only 9 percent of small-town enterprises and 10 percent of village enterprises in Sindh are registered, as compared to 32 percent of small town enterprises and 21 percent of village enterprises in Punjab (Table 4.4). On average it takes about nine days (if necessary) for a village enterprise to get a permit to operate and about 12 days in small towns (Annex Table 4.2). Between one and two government agencies are involved in the issuing of permits and costs range from around Rs 500 in villages to Rs 1,000 in small-towns. In comparisons with corresponding data from Sri Lanka, it is clear that in Pakistan the registration process for non-farm enterprises is longer and costs are higher. While few non-farm enterprises in villages and small towns are registered in Pakistan, more than half of comparable businesses in Sri Lanka are registered.

service sector (defined as including social and personal services, real estate and insurance and transport and storage).

⁶⁵ The sectoral distribution of enterprises in Pakistan is similar to that of Nicaragua, where manufacturing accounted for about 6 percent of rural non-farm enterprises, 42 percent were in the service sector and the remainder were in trade.

⁶⁶ The main agricultural commodities grown in the surveyed villages were wheat, rice and sugarcane in Punjab; wheat, sugarcane and cotton in Sindh; and wheat, maize and jawar (sorghum) in NWFP.

Table 4.4. Profile of Non-farm Enterprises

	Punjab		Sindh		NWFP		All	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Employment								
Average number of workers	1.81	1.65	2.25	2.15	1.87	1.55	1.99	1.71
Size distribution								
2 or fewer workers	84%	92%	76%	72%	87%	89%	81%	88%
2-5 workers	14%	6%	21%	28%	10%	11%	16%	11%
More than 5 workers	2%	1%	4%	1%	3%	0%	3%	1%
Firms hiring workers	19%	9%	25%	30%	31%	3%	23%	11%
Age								
Average age of firm	9.89	8.29	7.41	8.76	6.81	6.01	8.42	7.91
Age Distribution								
2 years or less	14%	26%	15%	8%	15%	27%	15%	23%
2-5 years	26%	29%	39%	34%	29%	30%	31%	30%
5-10 years	24%	19%	19%	20%	30%	17%	23%	19%
More than 10 years	36%	26%	27%	38%	27%	26%	31%	28%
Manager profile								
Manager is male	98%	99%	100%	100%	93%	100%	98%	99%
Years of experience	3.09	1.87	2.92	3.35	5.11	4.13	3.35	2.56
Level of Education								
None	13%	35%	8%	10%	24%	23%	13%	29%
Completed Secondary	27%	13%	30%	29%	33%	26%	29%	18%
F.A./FSc	11%	7%	18%	18%	13%	18%	14%	11%
Professional Degree	1%	1%	1%	3%	0%	1%	1%	1%
University Degree	5%	3%	13%	3%	6%	9%	8%	4%
Sectoral Distribution								
Production	12%	11%	4%	19%	3%	8%	8%	12%
Services	41%	32%	27%	28%	25%	32%	33%	31%
Trade	46%	57%	68%	53%	73%	60%	59%	57%
Registration & Taxes								
Registered firms	32%	21%	9%	10%	12%	9%	19%	17%
Pay income taxes *	17%	5%	12%	16%	4%	0%	13%	6%
Sole-proprietorships	91%	94%	92%	96%	93%	91%	92%	94%

Source: Authors' calculations based on the Pakistan Rural Investment Climate Survey, 2005. .

* There were a large number of missing observations for the question on income taxes. The numbers reported in this table assume that firms did not pay income taxes if this question was unanswered.

Owners and managers of enterprises tend to be relatively inexperienced, with an average of three years experience. Managers of small-town enterprises are slightly better educated than village entrepreneurs. Small town entrepreneurs were less likely to report having no education than rural entrepreneurs (13 percent versus 29 percent) and slightly more likely to have a university degree (8 percent versus 4 percent) (Table 4.5). Virtually all non-farm enterprises are owned and operated by men. This is not surprising as female participation in Pakistan's labor force, for activities outside the home was 11 percent in 1999-00, the lowest in South Asia among countries with employment data by gender (World Bank 2004).

Median annual sales revenue for small town enterprises, (Rs 180 thousand) are about 1.8 times larger than median annual sales revenues for village enterprises (Rs 102,000) (Table

4.5).⁶⁷ Revenue from both village and small-town enterprises in Sindh are almost twice as large as revenue for Punjab and NWFP enterprises. Even the smallest enterprises in Sindh have median revenues 2.3 times those of the smallest NWFP enterprises and 1.7 times those of the smallest Punjab enterprises (Annex Table 4.3). Across provinces and regions, median revenues are consistently highest for traders and lowest for service-sector enterprises.

Table 4.5. Enterprise Sales and Assets ('000 Rs)

	Punjab		Sindh		NWFP		All	
	Small Town	Rural	Small Town	Rural	Small Town	Rural	Small Town	Rural
Sales revenues (mean)	328	206	453	265	192	138	355	202
Sales revenues (median)	151	98	295	180	160	96	180	102
Value of fixed assets (mean)	102	46	121	51	39	31	99	44
Value of fixed assets (median)	10	14	25	14	10	7	15	12
Fixed assets per worker (mean)	72	35	69	27	31	21	64	30
Fixed assets per workers (Median)	7	11	13	7	6	6	8	10
Value added (mean)	59	30	87	53	(38)	24	55	32
Value added (median)	48	25	46	31	14	11	43	24
Value added per worker (mean)	41	24	53	29	(3)	21	39	24
Value added per worker (median)	28	20	28	18	7	7	27	18

Source: Authors' calculations based on the Pakistan Rural Investment Climate Survey, 2005.

The median value added per worker was Rs 18,000 (about \$300) for village enterprises and around Rs 27,000 (\$450) for small-town enterprises. These estimates are very close to those of rural non-farm enterprises in Bangladesh (\$480) and Vietnam (\$420). The median value added per worker in NWFP is considerably lower than that in Sindh and Punjab. In both of these provinces the median value added per worker in small-town enterprises is about 50 percent higher than it is for village enterprises; however in NWFP the median value added per worker is virtually the same in both small towns and villages.

The median value of fixed assets was around \$200 for village enterprises and \$250 for small-town enterprises; the mean however was considerably higher, about \$2,830 for small-town enterprises and \$682 for village enterprises. Once again, these figures are quite similar to those observed for similar types of enterprises in other countries. Recent survey data from Vietnam indicate median fixed assets in rural enterprises of around \$168. Although Pakistan's enterprise sector does not appear to be particularly dynamic, data indicate some employment growth in this sector. The average annual compound employment growth has been about one percent for village enterprises and three percent for small-town enterprises.⁶⁸

THE RURAL INVESTMENT CLIMATE

It is widely recognized that a good investment climate provides opportunities and incentives for firms to invest productively, create jobs and expand (World Bank 2004). To gauge the effects of the investment climate on the performance of non-farm enterprises in Pakistan's small

⁶⁷ This is based on an exchange rate of US\$1= 60 Pakistan rupees.

⁶⁸ Employment growth rates are calculated for the subset of firms that reported data for both 2001 and 2004.

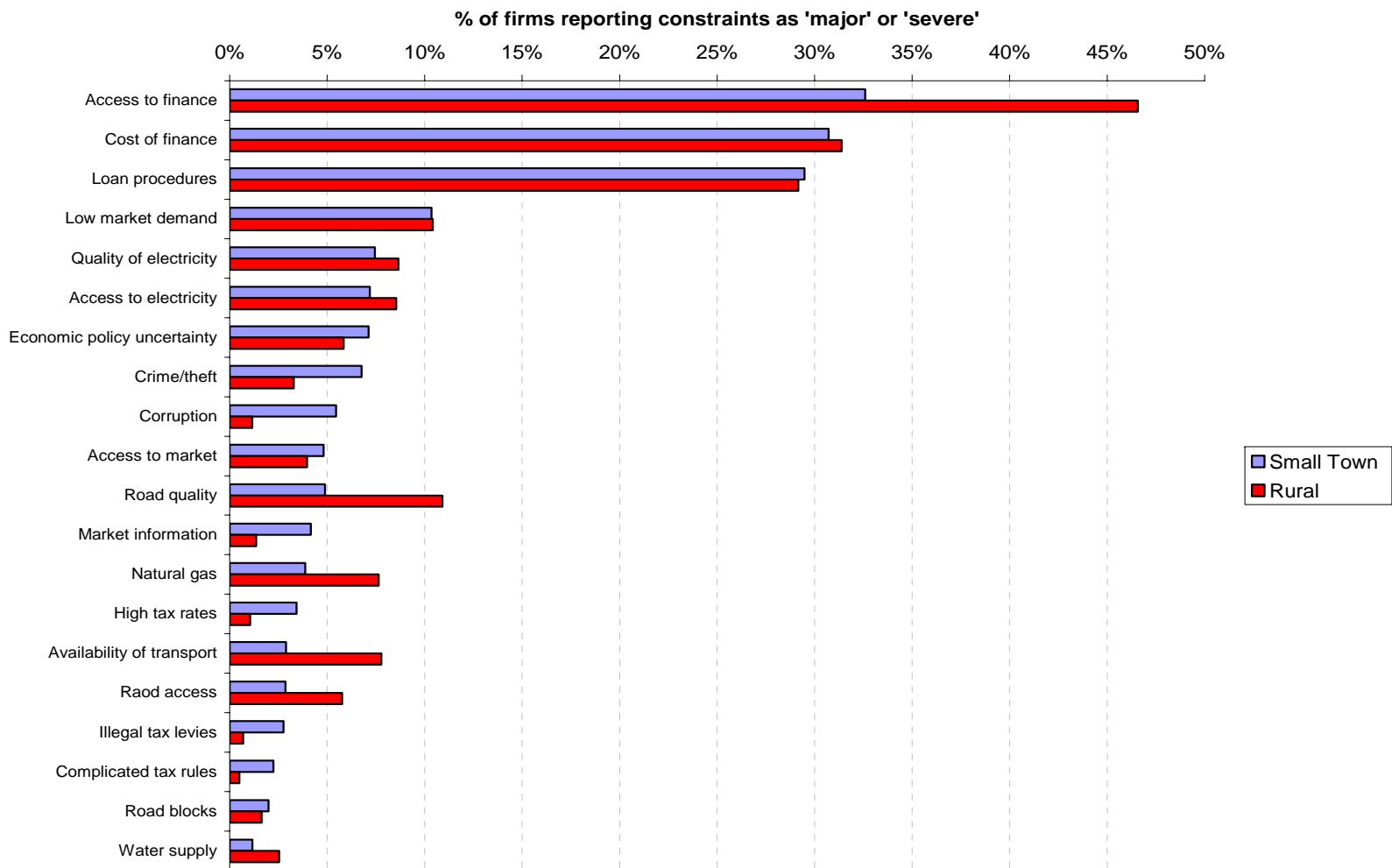
towns and villages, the RIC Survey asked entrepreneurs to subjectively appraise the various political, administrative, economic and infrastructural conditions affecting their enterprise's operation and growth. In addition to these subjective indicators, data were also collected on various objective measures of the investment climate.

The most significant obstacles identified in the survey by small-town and village entrepreneurs in the provinces of Sindh, Punjab and NWFP were access to formal finance, the cost of finance and cumbersome loan procedures (Figure 4.1). With the exception of small towns in Sindh, more than a third of entrepreneurs cited access to finance as a serious obstacle to business operation (Annex Table A4.5). Access to finance was rated the single most important overall constraint facing firms in Punjab and NWFP. In Sindh cumbersome loan procedures topped the list of the most important overall constraint.

Poor infrastructure also ranks as a serious constraint for businesses in villages and small towns. Access to electricity, the quality of electricity, road quality, and availability of transport are among the main infrastructure constraints identified. The disparity in perceptions between village entrepreneurs and small-town entrepreneurs with respect to these infrastructure constraints is quite striking. A larger proportion of village entrepreneurs reported infrastructure constraints as a major obstacle to business than did small-town entrepreneurs (11 percent compared to 5 percent). While infrastructure bottlenecks pose more of a challenge to village enterprises, enterprises in small towns perceive economic policy uncertainty, crime and corruption as relatively more serious than their village counterparts. Low market demand also ranks fairly high among the various constraints faced by firms in both rural and small-town Punjab, indicating that entrepreneurs there perceive that they do not have access to a large enough consumer base.

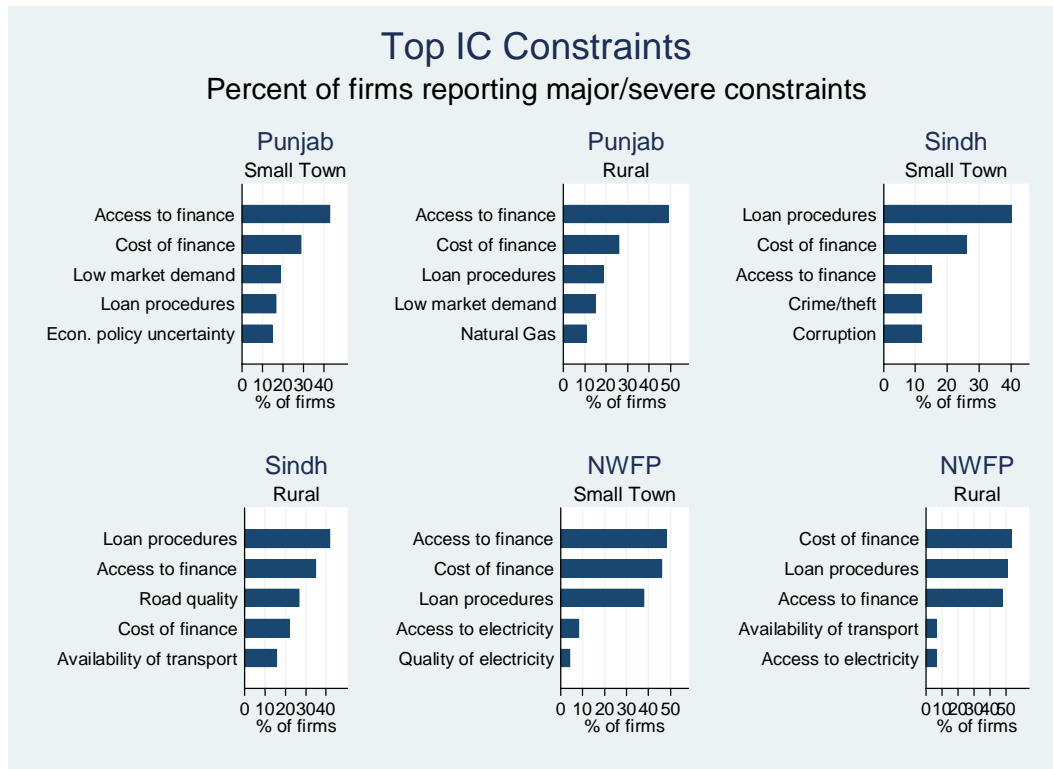
The Pakistan Rural Investment Climate data indicate considerable differences in the way rural and small town entrepreneurs perceive investment climate constraints as compared to entrepreneurs in larger cities, but there are also some similarities. The most significant constraints identified by urban (large city) firms in the Pakistan Investment Climate Assessment 2003 related to tax administration and tax rates; more than 45 percent of surveyed urban firms reported tax-related issues as major or severe obstacles (World Bank, 2005g). By contrast, a mere three percent of rural firms considered taxation a major obstacle.. This is hardly surprising given that many small-town and village enterprises are informal firms and few pay taxes. On the other hand, issues related to the cost of finance and access to finance appear to pose a challenge for rural, small town and urban firms alike. Electricity and corruption are also common constraints, although the proportion of rural and small town firms that rate these problems as major constraints is considerably smaller. This may reflect differences in the types of businesses found in cities as opposed to small towns and villages.

Figure 4.1. Climate Constraints for Small-town and Rural Enterprises, 2005



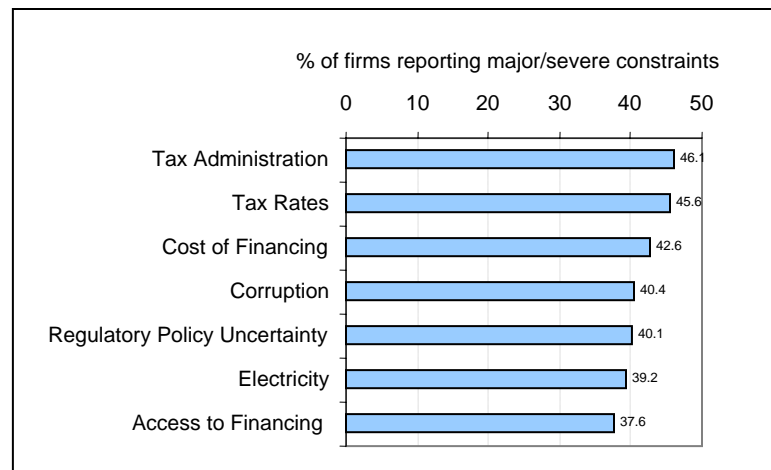
Source: Pakistan Rural Investment Climate Survey, 2005.

Figure 4.2: Pakistan: Major Rural and Small Town Investment Climate Constraints



Source: Pakistan Rural Investment Climate Survey, 2005.

Figure 4.3: Investment Climate Constraints Identified by Urban Firms in Pakistan, 2003



Source: World Bank and SMEDA 2003

Though the business challenges faced by non-farm enterprises in villages and small towns are appreciably different to those for businesses operating in large cities, the former are not dissimilar to those reported by rural non-farm enterprises in other countries. When the subjective assessments of Pakistan's small town and village entrepreneurs are compared to those made by their counterparts in Sri Lanka, Nicaragua and Tanzania, countries for which

comparable data are available, numerous similarities are evident (World Bank 2006c). In Nicaragua and Tanzania access to finance ranks as a major problem for 27 percent and 47 percent of rural entrepreneurs, respectively. While access to finance is of less concern in Sri Lanka, (where only nine percent of businesses identified it as a major or severe constraint), 29 percent of Sri Lanka's rural entrepreneurs reported that the cost of finance was a major challenge. Infrastructure problems rank high among the constraints identified by non-farm enterprises in Pakistan, but fewer firms there complain about infrastructure than in other countries. This does not necessarily mean that infrastructure conditions in rural Pakistan are superior to those of other countries; perceptions of what benefits and what hampers investments depend on business size, activities, capabilities, and the degree of formality. Data on objective measures would need to be carefully compared in order to accurately assess differences in the availability and quality of infrastructure across comparator countries.

Relatively few rural entrepreneurs in Pakistan identify governance issues and policy uncertainty as a major problem. In Nicaragua and Tanzania about 12 percent and 17 percent of firms, respectively, identified crime as a major constraint compared to 3 percent of village enterprises and 7 percent of small-town enterprises in Pakistan. Thirty-seven percent and 17 percent of Nicaraguan and Tanzanian enterprises cited economic policy uncertainty as a major concern. The corresponding figures for Pakistan are two percent for village enterprises and seven percent for small-town enterprises. However, economic policy uncertainty is a more important concern in small towns in Punjab where 15 percent of firms reported this as a major or severe problem. The proportion of entrepreneurs that identify governance as a major problem in Sri Lanka and Pakistan are comparable; however slightly more firms in Pakistan complained about corruption and crime than in Sri Lanka.

Access to Finance

Access to formal credit rates as the top business constraint among village and small-town non-farm enterprises in Pakistan. Roughly similar proportions of enterprises also rated the cost of finance and cumbersome loan procedures as major obstacles. Of surveyed business owners, 28 percent in rural areas (34 percent in small towns) wanted to apply for a formal loan in the five years preceding the survey. However, only about 14 percent in rural areas (20 percent in small towns) of these enterprises did actually go on to apply for a loan. Of those wanting a loan, but that did not apply for one, 40 percent stated that loan procedures were too complicated, 27 percent felt that the interest rate would be too high, 16 percent felt that they had insufficient collateral and 8 percent stated that the duration of the loan would be too short. Overall, few firms (four percent in villages and seven percent in small towns) applied for a formal loan to finance investment or working capital in the five years preceding the survey. Enterprises in Sindh seem to have relatively better access to finance. There, the proportion of enterprises applying for loans was highest (8 percent of village enterprises and 14 percent of small-town enterprises). By contrast, only one percent of small-town enterprises and three percent of village enterprises in Punjab and NWFP applied for loans. Comparison of these results with those from other countries reveals that the proportion of small-town and village enterprises that receive loans from formal lenders in Pakistan is relatively low. In Sri Lanka, 25 percent of enterprises received formal loans in 2002-03. Nicaraguan businesses also received formal loans at a similar rate in 2004 (28 percent). In the same year in Tanzania, however, only six percent of firms received formal loans, which is comparable to Pakistan (World Bank 2006d).

Table 4.6: Pakistan: Rural and Small Town Firms' Access to Finance, 2005

	Punjab		Sindh		NWFP		All	
	Small Town	Rural	Small Town	Rural	Small Town	Rural	Small Town	Rural
Firm wanted to apply for a loan in past 5 years	41%	36%	38%	24%	7%	7%	34%	28%
Firms that applied for loans (of those wanting a loan)	3%	8%	38%	34%	17%	39%	20%	14%
Firms that applied for a loan (among all firms)	1%	3%	14%	8%	1%	3%	7%	4%
Firm has a PLS account	10%	12%	12%	18%	5%	9%	10%	12%
Firm has current account	3%	2%	13%	17%	4%	6%	8%	6%
Firm has overdraft facility	1%	2%	10%	4%	4%	2%	6%	2%
Firm has access to supplier credit	53%	43%	59%	48%	45%	51%	54%	46%
Repayment period supplier credit (median days)	10	15	15	15	10	15	15	15
Share of goods/inputs purchased on credit	50%	50%	50%	50%	50%	50%	50%	50%
Prepares a financial statement	2%	1%	22%	13%	6%	10%	11%	5%
Made new fixed investment	39%	31%	80%	87%	57%	44%	58%	43%
Mean value of new fixed investment (Rs.)	26,570	22,554	21,479	13,973	14,561	25,868	21,889	20,452
Median value of new fixed investment (Rs.)	10,000	5,000	10,000	8,000	4,000	10,000	8,500	8,000
Share of investment from own savings	95%	94%	88%	90%	89%	67%	90%	87%
Share of investments from formal loans	0%	0%	2%	0%	0%	0%	1%	0%
Share of investment from relatives/friends	4%	5%	5%	8%	10%	33%	5%	12%
Share of investments from private lenders	0%	1%	5%	1%	1%	0%	3%	1%
Source of start-up capital								
<i>Family or friends</i>	53%	38%	43%	28%	32%	50%	46%	39%
<i>Income from agriculture</i>	6%	17%	3%	20%	7%	14%	5%	17%
<i>Income from non-farm activities</i>	36%	39%	19%	35%	36%	25%	29%	36%
<i>Remittances</i>	0%	3%	2%	0%	8%	3%	2%	2%
<i>Sale of assets</i>	7%	6%	19%	13%	9%	0%	12%	6%
<i>Bank loan</i>	0%	1%	2%	1%	0%	0%	1%	0%
<i>Private money lenders</i>	2%	1%	1%	1%	0%	0%	1%	1%
<i>Other</i>	5%	8%	20%	9%	11%	14%	11%	9%
Share of start-up capital from:								
<i>Family or friends</i>	49%	33%	41%	25%	29%	48%	42%	35%
<i>Income from agriculture</i>	5%	16%	2%	18%	7%	13%	4%	16%
<i>Income from non-farm activities</i>	31%	37%	15%	34%	35%	24%	25%	34%
<i>Remittance</i>	0%	2%	2%	0%	9%	3%	2%	2%
<i>Sale of assets</i>	6%	5%	19%	13%	9%	0%	12%	5%
<i>Bank loan</i>	0%	0%	2%	1%	0%	0%	1%	0%
<i>Private money lenders</i>	2%	1%	1%	1%	0%	0%	1%	1%
<i>Other</i>	5%	6%	18%	8%	11%	11%	11%	7%

Source: Authors' calculations based on the Pakistan Rural Investment Climate Survey, 2005.

The major source of formal enterprise finance is commercial banks. Of 1651 enterprises surveyed, 70 enterprises reported applying for at least one formal loan.⁶⁹ Firms that applied for loans are evenly split between small towns and villages and around 40 percent of such firms were in Punjab, another 40 percent were in Sindh and the remainder in NWFP. Sixty-two percent of firms applied to commercial banks for loans, 17 percent applied to NGOs, 8 percent applied to institutions that finance Small and Medium Enterprises (SMEs) and the remainder to other

⁶⁹ Only five enterprises reported applying for more than one loan

sources.⁷⁰ Two-thirds of loan applications were approved by lenders. Among rejected applications, 36 percent were refused because of insufficient collateral, 8 percent of applicants had no co-signer and the remaining were rejected for a variety of other reasons.

Almost all formal enterprise loans require collateral and are fairly short-term in nature. Median loan size was Rs 25,000 (the average was about Rs 72,000) and about 76 percent of approved applicants received the full amount they had applied for.⁷¹ Loan terms are short, ranging from about two months to five years; the median loan term was for one year and the average was about 15 months. The median annual interest rate on loans was 12 percent. For almost 80 percent of approved loans, collateral was required by the lender. This is unsurprising as previous studies on the availability of farm credit also found that collateral to be a requirement for all formal loans (World Bank 2004). The most common forms of collateral were property/buildings (used in 28 percent of loan applications) and land (used in 26 percent of loan applications). On average the value of collateral required was equal to 132 percent of the loan amount (the median value was 100 percent).

The fact that only a small fraction of enterprises that seek loans are actually able to apply for one is consistent with observed trends in Pakistan's formal sector, which is largely urban based and which advances to the rural sector loans worth only a small fraction (3.5 percent) of those advanced to the urban sector. Commercial banks appear to face higher costs and risks in lending to small businesses, while the latter often do not know what is needed to qualify for bank financing and lack critical market information. Small businesses are geographically dispersed, and lenders usually face greater costs in identifying potential borrowers, conducting due diligence, and maintaining contact with the borrower after a loan has been made. Small entrepreneurs also often lack formal financial records and have typically more limited track records. Only about 5 percent of village enterprises and 11 percent of small town enterprises in Pakistan prepare financial statements (Table 4.6).

Overall very few firms appear to deal with the formal banking sector. At most 10-12 percent of enterprises keep savings accounts and less than 10 percent maintain checking accounts. A very tiny fraction of village (two percent) and small-town enterprises (six percent) have access to an overdraft facility to finance investment or working capital needs. There is a strong correlation between lack of access to banking services and the degree to which firms cite finance as a major constraint. In small towns in Sindh only 14 percent of enterprises mentioned access to finance as a major or severe constraint. Thirty-eight percent of firms in small towns in Sindh that wanted a loan actually applied for one (Table 4.6); 22 percent of Sindh's small-town enterprises prepared financial statements.

The primary sources of start-up capital for village and small town non-farm enterprises are funds borrowed from family and friends and income from nonfarm activities (Table 4.6). The share of start-up capital from bank loans is negligible (one percent for small town enterprises and less than one percent for village enterprises). These findings are not dissimilar to results from other countries. New business owners have unproven track records and are therefore less likely to secure formal finance.

The major source of investment finance was savings and funds from family and friends. About 43 percent of village enterprises and 58 percent of small-town enterprises made new investments in the year preceding the survey. Among firms making new investments, the median investment was Rs 8,000 (\$133) for village enterprises and Rs 8,500 (\$142) for small-town enterprises. Close to 90 percent of all new investments were made using savings. The average

⁷⁰ NGO finance for enterprises appears to be used only in Sindh.

⁷¹ The average size of the loan received was equal to 92 percent of the amount applied for.

investment, which ranged between Rs 20,400 and Rs 21,900 (\$340 and \$365), was less than half the size of the average investment made by similar types of enterprises in Sri Lanka.

While access to long-term finance and formal credit for working capital and investment is limited, Pakistan's non-farm enterprises seem to have better access to supplier credit than do firms in other countries.. Approximately 46 percent of village enterprises and about 54 percent of small-town ones purchase inputs/goods on supplier credit. Small-town enterprises in Sindh appear to have the best access to supplier credit of the three provinces. This type of credit is generally only extended on a very short term basis with most enterprises required to make repayment within two weeks. Across the various sectors, traders are significantly more likely to have access to supplier credit than manufacturing or service enterprises. Firms purchase about half their inputs using supplier credit (Table 4.6).

Infrastructure

Village enterprises are more constrained by poor infrastructure than those located in small towns. Road quality, availability of transport and access to electricity rank among the top constraints reported by village entrepreneurs. Quality and access to electricity is also a concern for businesses in small towns. Entrepreneurs in villages in Sindh were more likely to identify road- and transport-related problems as a major constraint those in other provinces. Data on road quality (the type of internal roads in the community), availability of public transport and connectivity reveal that villages in Sindh are indeed disadvantaged compared to enterprises located elsewhere. For instance, 93 percent of enterprises in rural Sindh are located in communities where dirt roads are the most common type of internal road surface (Table 4.7). By contrast only about 54 percent of village business owners in NWFP and 26 percent in Punjab report being located in a community where dirt roads are commonest. Twenty-eight percent of village enterprises in Sindh are located in communities with public transportation to the nearest major city. For Punjab and NWFP the corresponding figures are 85 percent and 47 percent, respectively. Although the distance to the nearest main city from villages in Sindh is comparable to those for villages in Punjab and NWFP, travel times are considerable longer (Table 4.7). This may reflect both the poor quality of roads and the lack of available public transport. Fewer small-town entrepreneurs complain about road quality and availability of public transport than do village entrepreneurs; it is not surprising that small-town enterprises have better roads and access to public transport.

Access to electricity remains a major challenge in many rural villages and small towns, and even for enterprises that have access, supply is unreliable. The last urban investment climate assessment in Pakistan found that the typical business loses 5.6 percent of annual output due to power outages, much higher than in China (1.99 percent) and Bangladesh (2.35 percent) (World Bank and SMEDA 2003). Although electricity connectivity in small towns and villages in Pakistan appears to be quite high (83 percent of village enterprises and 96 percent of small town enterprises reported having access to electricity), almost all enterprises with access to the grid experience power outages.⁷² In villages and small towns of Sindh as well as villages in NWFP, entrepreneurs report almost daily outages. The median number of days with power outages in a typical month was reported as being 20 days in villages and 15 days in small towns. Frequent outages increase production costs and generators are usually prohibitively expensive for these small business. Approximately five percent of village enterprises and around seven percent of small-town enterprises reported owning or sharing a generator.

⁷² Connectivity to the grid appears relatively high compared to rural Sri Lanka where slightly less than 70 percent of enterprises reported using electricity.

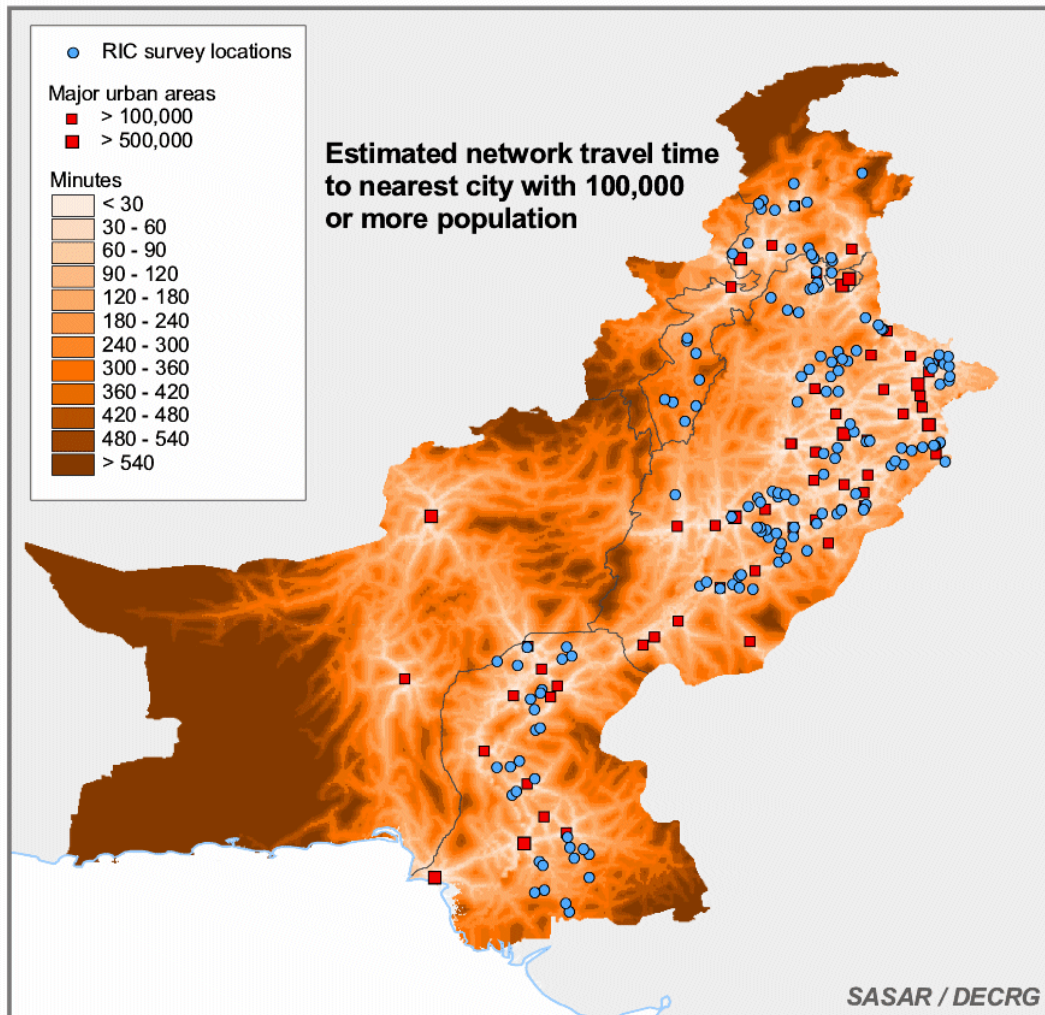
Table 4.7. Quality of, and Access to, Infrastructure

	Punjab		Sindh		NWFP		All	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Roads & Transport								
<i>Proportion of enterprises located in areas where:</i>								
Internal roads are dirt roads	1%	26%	37%	93%	0%	54%	15%	42%
Public transport is available to the nearest main city	98%	85%	85%	28%	92%	47%	92%	68%
A main road connects the community to nearest city	91%	97%	93%	82%	100%	98%	93%	95%
<i>Distance and Travel Time</i>								
Median distance to nearest main city (Km)	40	15	32	14	12	15	32	15
Median travel time to nearest main city by main means of transport (minutes)	60	30	40	60	25	45	45	30
Median travel speed to nearest main city (km/hr)	40	30	48	14	29	19	43	29
Electricity								
Enterprises with access to electricity	97%	79%	94%	81%	98%	96%	96%	83%
Enterprises connected to the grid reporting power outages	98%	99%	100%	100%	100%	100%	99%	100%
Median days/month when outages occur	10	10	30	30	20	30	15	20
Own or share a generator	4%	7%	12%	4%	5%	0%	7%	5%
Median days to get new electricity connection	40	45	20	30	30	20	30	30
Unofficial fees needed for a new connection	81%	90%	100%	100%	97%	100%	91%	94%
Telecommunications								
Owns fixed-line phone	28%	9%	24%	4%	39%	6%	28%	7%
Owns cellular phone	10%	3%	3%	3%	19%	6%	9%	4%
Uses fax	0%	0%	1%	0%	3%	0%	1%	0%
Uses email	1%	0%	0%	0%	2%	0%	1%	0%

Source: Pakistan Rural Investment Climate Survey, 2005

Access to and use of telecommunications among enterprises surveyed is surprisingly limited, particularly considering that close to 60 percent of the enterprises are engaged in trade. About 28 percent of respondent small-town entrepreneurs owned fixed line phones and 9 percent owned cellular phones (Table 4.7). The comparable figures for village entrepreneurs are seven percent for fixed-line phones and four percent for cellular phones. On the whole, small-town entrepreneurs in NWFP appear to have slightly better connectivity than their counterparts in the other two provinces. The most recent urban investment climate assessment found that only 30 percent of urban businesses in Pakistan regularly communicate with customers or suppliers using the Internet—far less than the 71 percent of firms that do so in China or the 45 percent that do so in India. Access to Internet connectivity for rural and small-town firms is extremely limited and only about one percent of the latter reported using email.

Figure 4.4. Estimated Network Travel Time and Rural Investment Climate Survey Sites



Source: Authors' Calculations based on PSLM 2004-05 survey and the Pakistan Rural Investment Climate Survey, 2005.

Marketing

About 18 percent of rural enterprises and 26 percent of small-town enterprises reported that they face obstacles with respect to marketing. Somewhat surprisingly small-town entrepreneurs were more likely to report marketing-related problems despite being located in larger communities (the average small town's population was around 43,000 compared to a population of 7,300 in villages) and having access to more customers and markets (Annex Table 4.6). Low market demand ranked among the top five constraints reported by businesses in both small towns and villages.

There are however, significant differences across provinces. Entrepreneurs in Punjab were more likely to report marketing obstacles (42 percent in small towns and 25 percent in villages) than their counterparts in Sindh and NWFP (13 percent in small towns and 6-7 percent in villages) (Annex Table 4.4). This is despite the fact that Punjab appears to have the best access to markets of the three provinces. The small towns and villages surveyed in Punjab are considerably larger than those surveyed in Sindh and NWFP (Annex Table 4.6). Other measures of market access, including travel times to larger cities and a market accessibility index, also suggest that Punjab has relatively better access to markets. In small towns in Punjab, production-oriented enterprises are almost 30 times as likely to report problems with marketing as service-sector firms, but there is no significant difference between the ratings of production-related enterprises and traders respectively with respect to the constraints imposed by low demand. On the other hand, traders in villages were significantly more likely than production-related enterprises to cite low demand as a problem.

With the exception of production-oriented firms in NWFP, the markets and customer base of village and small-town enterprises are limited to local markets and most sales are made to customers within the same *tehsil* (administrative division). Seventy percent of sales by both village and small-town production enterprises in NWFP are to buyers in other provinces (Annex Table 4.7). The exact reasons for these differences are not readily apparent. In all three provinces most services-sector firms and traders sell locally either within the same village, or to a different village within the same union council. Service-sector firms and traders in small towns make significantly larger sales to wider markets, although most sales still take place within the same *tehsil*. The vast majority of sales are made directly to households or to other small firms.

Technology and Business Services

Lack of innovation and poor product quality also limits the access of rural firms to wider markets. Few rural firms in Pakistan reported making improvements and/or technological innovations over time. Only six percent of small-town and village enterprises reported that they had made new innovations and/or technological improvements (Annex Table 4.8). The propensity of undertaking technological innovation is significantly higher among larger firms, with better educated managers. One possible explanation could be that larger firms have the required resources to develop innovative products, whereas smaller firms do not. Lack of financial resources, technological or management know-how, and the lack of access to networks (such as business associations) are all factors that contribute to low levels of product innovation among rural firms.

Few rural and small-town entrepreneurs tap into formal business networks. Evidence from other countries suggests that participation in business organizations and local chambers of commerce could potentially strengthen marketing channels. This allows businesses to share information on prices, quality standards and obtain technical, financial and organization services

for greater value addition. A very small proportion of non-farm enterprises in small towns and villages in Pakistan are able to take advantage of these networking opportunities. Even though there are no significant differences in participation across industry types, participation varies by location; village enterprises are significantly less likely to participate than small-town enterprises in all provinces. Two percent of village enterprises are members of a Chamber of Commerce or other business association compared to 11 percent of small-town enterprises (Annex Table 4.9). Participation in business associations is highest in small towns in Punjab, followed by small towns in Sindh and NWFP. Controlling for industry type and location, enterprises with more educated managers are significantly more likely to belong to a business association.

Very few firms reported that they need or use formal business services, which is unsurprising given the informal nature of many rural and small-town businesses. Annex Table 4.10 provides a summary of the various business services that are accessible within an hour's travel time from the town or village in which the enterprises are located. While about a third of small-town businesses have access to various types of services such as legal services, accounting services and insurance only 5-15 percent of rural enterprises have similar access. Even though various services are available, virtually none of the businesses reported needing or using available services.

Security and Rule of Law

Crime appears to be much less of a concern for enterprises located in small towns and villages than for those operating in large cities. A politically and economically stable environment is necessary to unleash productive investments (World Development Report 2005). The 2003 Investment Climate Assessment (ICA) found a high incidence of urban crime and widespread concern among urban business managers over theft, arson, extortion, intimidation of employees and destruction of business property. NWFP fared particularly poorly; 32 percent of businesses in NWFP reported having been victims of crime, compared to 22 percent in Punjab and 11 percent in Sindh. On average, urban firms in NWFP reported spending 4.5 percent of revenue on security; the comparable figures for firms in Sindh and Punjab were one and two percent. Of all small-town and village enterprises surveyed, crime ranks as one of the top five constraints in only small towns in Sindh, where about 12 percent of entrepreneurs identified crime as a major or severe problem.

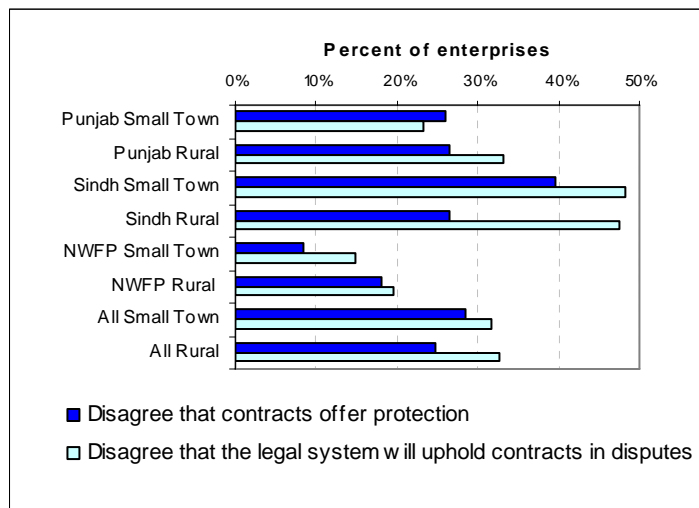
Overall about five percent of enterprises in villages and seven percent of those in small towns reported having actually been a victim of robbery or theft (Annex Table 4.11). The proportions of village and small-town enterprises that report having experienced crime are similar across the three provinces. About a third (32 percent) of small-town enterprises reported paying for security, with another 28 percent claiming they pay for protection. The corresponding figures for village enterprises are 16 percent and 11 percent. Large numbers of firms in Sindh reported making protection payments, worth an average of about one percent of sales revenue.

In addition to having experienced more crime, businesses in Sindh are also more likely to claim to be located in neighborhoods affected by tension, conflict and violence. More than a third of small-town and village enterprises in Sindh were located in areas with some degree of conflict, compared to 5 and 10 percent in Punjab respectively, and 14 percent of small-town enterprises in NWFP, albeit none in rural NWFP (Annex Table 4.12). The data also indicate that about 86 percent of village enterprises in Sindh are located in communities divided along social, religious, economic or other lines. A relatively large proportion of small-town enterprises in Sindh (67 percent) and rural businesses in NWFP (66 percent) are also located in areas that are

divided along social/religious/economic lines. In small towns and rural Sindh, the primary factor contributing to perceptions of difference pertained to land ownership. This was a leading factor in perceptions about difference in rural areas of NWFP, although differences in political affiliation was most frequently identified as the source of problems. In small towns in NWFP, differences in ethnic/caste/tribal background as well as political affiliations contribute to perceived and real divisions in the community. Very few Punjab enterprises whether in villages (seven percent) or in small towns (five percent) reported being located in communities that experienced conflict or other divisions.

A majority of entrepreneurs (69 percent of those in small towns and 62 percent of those in rural areas) described laws and regulations affecting their businesses as predictable, although a large proportion of business owners in Sindh perceive laws and regulations in their communities that affect their businesses as highly unpredictable. Assurances that contracts will be honored, disputes handled fairly and efficiently by the legal system, and that legal rulings will be enforced are important for attracting investment as well as for doing business with geographically dispersed firms. The majority of enterprises (67 percent of small-town enterprises and 64 percent of village enterprises) asserted that contracts offer them protection from being cheated (Figure 4.5). Confidence in contracts and contract enforcement is highest in NWFP where 90 percent of small-town entrepreneurs and 77 percent of village entrepreneurs felt protected by a contract. Confidence in contracts and the legal system’s ability to enforce them and property rights is lowest in small towns in Sindh.

Figure 4.5: Confidence in the Rule of Law in Three Provinces



Source: Authors’ calculations based on the Pakistan RIC Survey, 2005.

Rural Enterprise Ownership: Start-Up and Performance

While infrastructure such as electricity and fixed phone lines seem to have a positive effect on enterprise ownership in small towns, in rural areas other factors such as the number of government programs in a community appear to have greater importance. As part of the Pakistan RIC survey, households were asked whether any member was a proprietor of, or partner in, a non-agricultural enterprise within the last 12 months. About 40 percent of the 947 participating households had members that operated a non-farm enterprise. The determinants of

owning a non-farming business were analyzed using regression analysis (Annex Table 4.13). In both rural villages and small towns the effects of parents' occupation are powerful. Whether as a result of parental influence or because of the likelihood of actual business inheritance, ownership of a non-farm enterprise increased by fifteen to twenty percentage points the likelihood of one's offspring also owning one. Another important household characteristic is size; larger households are more likely to diversify income by owning a non-farm enterprise. While household size is a factor in the rural sector, it is more influential in small towns. More important in the rural areas is the amount of land cultivated.

Factors affecting start-up of non-farm enterprises include proximity to large cities for small-town enterprises and the number of government programs and access to communications facilities for those in villages. In addition to examining the determinants of enterprise ownership the survey also examined the factors that influence households' decisions to start up a non-farm enterprise. For this regression, households were excluded that own older businesses (those more than three years old), in order to compare two categories: those households that recently decided to start a business and those that decided not to. One finding is that households in small towns farther away from large cities are more likely to start businesses. This is not surprising as proximity to large cities means more competition. Small-town households also gain positive effects from having a male head of household and more valuable assets. In rural areas, government programs continue to play an important role and, as market access and communications are more significant constraints in villages, the effects of cell phone usage are significant. In addition, in rural areas older heads of household are more likely to start up a non-farm enterprise than younger ones. The regression results indicate that there is no significant effect of parents' occupation in start-up decisions in either rural areas or in small towns.

In addition to the overall investment climate, human capital, as measured by a manager's education, is an important determinant of village and small-town enterprise performance. The impact of various investment-climate constraints on enterprise performance is assessed by studying the impact of these factors on firm productivity, as measured by value added per worker (Annex Table 4.14). For enterprises in small towns, availability of public transport and the presence of a chamber of commerce in the *tehsil* have a significant positive impact on performance. On the other hand, more power outages negatively affect firms located in small towns. For village enterprises, access to finance in the form of a commercial bank in the community has a positive and significant impact on productivity; businesses located in communities with dirt roads seem to be negatively affected (although this variable is only significant at the 10% level).

Unsurprisingly the impact of the investment climate on a firm's performance varies by industry. Power outages have a significant negative effect on production-oriented firms although this is far less with service or trade businesses. Access to commercial banks has a positive and significant correlation with firm productivity for service-sector enterprises and production enterprise (although only significant at the 10% level for production enterprises), but is not significant in the trade regression. Access to commercial banks is probably more important for service- and production-related firms, as traders have relatively greater access to supplier credit. It is noteworthy that in virtually all circumstances, human capital as measured by the manager's education is an importance determinant of enterprise performance. Firms with more educated managers consistently perform better and, as mentioned earlier, are also more likely to innovate and access business networks.

POLICY IMPLICATIONS

Although Pakistan's rural non-farm sector is an important source of employment and contributes significantly to improving household welfare, particularly of the rural poor, improving the sector's productivity and dynamism will require targeted policies and public investments. While a number of successful financial-sector reforms have been implemented in recent years, rural non-farm enterprises, which are primarily micro enterprises, seem to have benefited little from these. Access to formal credit for investment purposes or working capital is extremely limited, and evidence of large unmet demand for credit suggests a need for alternative measures to ensure enterprises with bankable business plans access to external sources of finance. Easing some of the high collateral requirements for formal loans and developing alternative forms of collateral acceptable to banks would improve access to credit. There is also evidence to suggest that loan application procedures need to be less onerous. At the same time, practical training for entrepreneurs in accounting and the preparation of business plans would greatly improve the ability of many businesses to signal their credit-worthiness to financial institutions.

Provision and improvement of infrastructure, particularly roads and reliable electricity, can reduce operating and marketing costs, thereby making investments in rural and small-town enterprises more profitable. There is a particular need in Sindh to invest in rural roads, as distances and transport costs there are higher than in Punjab and NWFP. Among vital measures to improve the quality of roads and transport services are: better road maintenance and extension of basic motorable access; improved institutional arrangements for ownership, management and financing of rural transport systems in accordance with the realities of devolution; and promoting greater community involvement in planning and managing transport infrastructure improvements to ensure that infrastructure meets local needs (World Bank 2005). An unreliable electricity supply is also a severe obstacle to the development and growth of non-farm enterprises, particularly in the manufacturing sector. Unlike their urban counterparts, few rural non-farm enterprises are able to afford generators, and unreliable electricity has likely limited the emergence of small manufacturing units, which also tend to generate relatively larger numbers of jobs. Increased investment in power distribution and transmission is needed, but there has been little progress in implementing key reforms in the energy sector that would make these investments forthcoming.

Other important measures to promote the growth of rural non-farm enterprises include: facilitating market linkages; improving the mechanisms that underpin contract enforcement; promoting transparency in the legal system; and allowing non-farm enterprises a greater say in the policy making that pertains to them. Stronger market linkages could be facilitated through the creation and development of more effective local business associations and organizations. These organizations could arrange product fairs, help develop business directories, provide information services and educate entrepreneurs on how to undertake market research. Organizations could also share information on prices, quality standards and how to access technical, financial and organizational services for greater value addition. Facilitating group marketing and formation of business clusters could also help rural enterprises take advantage of economies of scale by allowing the purchase of inputs at lower prices, offering access to larger markets and facilitating shared use of equipment and infrastructure. Improving mechanisms for contract enforcement would also facilitate market linkages because this would enable smaller enterprises to enter into sub-contracting arrangements with larger firms, thereby gaining access to larger markets.

ANNEX TO CHAPTER 4: THE PAKISTAN RURAL INVESTMENT CLIMATE SURVEY, 2005

Despite the the non-farm sector's large contribution to rural incomes in Pakistan, there is limited information on the factors that affect the performance and growth of these enterprises. This knowledge gap is in large part due to inadequate data in general on rural non-farm enterprises. Much existing information on enterprise performance in Pakistan is based on surveys of formal urban manufacturing firms or on household surveys that do not elicit data on the investment climate or measures of enterprise performance. Given the nature and scale of rural enterprises, it seems likely that they face considerably different challenges from their urban counterparts. To better understand the rural non-farm enterprise landscape and identify policies that could potentially spur growth in this sector, the World Bank with support from Department for International Development and the FAO recently conducted a survey of the investment climate for rural non-farm enterprises in Pakistan (Box 4.1). This annex presents additional tables and findings from the survey not included in the main section of chapter 4.

Box 4.1: The Pakistan Rural Investment Climate (RIC) Survey, 2005

The Pakistan Rural Investment Climate Survey was undertaken between May and December, 2005. The survey covered three provinces of Pakistan: Punjab, Sindh and North West Frontier Province (NWFP). The sample comprised 1651 non-farm enterprises: 1069 in Punjab; 300 in Sindh; and 282 in NWFP). For the purposes of the survey, non-farm enterprises were classified as firms engaged in any activity excluding primary agricultural production (crops, livestock and fisheries). In each province roughly half the enterprise sample was drawn from small towns defined as Town Committees and Municipal Committees, with populations under 100,000. The remaining enterprises were selected from rural villages. In total the sample comprised: 50 small towns and 50 villages in Punjab covering 10 districts (Attock, Faisalabad, Bahawalpur, Vehari, Khanewal, Jhelum, Kasur, Pakpattan, Sargodha, and Sialkot); 15 small towns and 15 villages in Sindh (Khairpur, Mirpur Khas, Jacobabad, Nawabshah, and Badin districts); and 12 small towns and 16 villages in NWFP (covering D I Khan, Laki Marwat, Swat, Lower Dir, Haripur, Swabi, and Peshawar districts). The Pakistan RIC survey was conducted by Innovative Development Strategies, Pakistan and the World Bank, with support from the Department for International Development and the Food and Agriculture Organization of the United Nations.

Annex Table 4.1: Distribution of Farm and Non-farm Households in Rural Pakistan

	All Rural HHs	Punjab Rural HHs	Sindh Rural HHs	NWFP Rural HHs	Baluchistan Rural HHs
Farm Total	48.14%	45.19%	58.60%	44.81%	48.21%
Farmer	43.21%	39.99%	52.09%	42.28%	44.83%
Agricultural Labor	4.93%	5.19%	6.50%	2.54%	3.37%
Non-Farm Total	51.86%	54.81%	41.40%	55.19%	51.79%
Self-employed	17.99%	20.85%	12.00%	18.06%	11.12%
Other	33.88%	33.96%	29.40%	37.13%	40.68%

Source: PSLM 2004-05.

Annex Table 4.2: Business Registration

	Punjab		Sindh		NWFP		All		
	Small Town	Rural	Small Town	Rural	Small Town	Rural	Small Town	Rural	
Registering an enterprise									
Business requires a permit or license	6%	2%	100%	91%	100%	46%	54%	19%	
Days to complete registration process	21	14	33	11	8	7	24	9	
Days to get a permit to operate	13		14	11	9	7	12	9	
Number of government agencies that need to approve a permit to operate	1		2	1	2	1	2	1	
Cost of a permit to operate (Rs)	500	5,000	2,000	500	1,000	500	1,000	500	
Enterprises punished if not registered in communities where registration is required	100%	100%	74%	100%	84%	8%	79%	53%	

Source: Authors' calculations based on the Pakistan Rural Investment Climate Survey, 2005

Annex Table 4.3: Sales Revenues

Quintiles of Sales		Punjab		Sindh		NWFP		All	
		Small Town	Rural	Small Town	Rural	Small Town	Rural	Small Town	Rural
1	Mean	28,929	25,211	41,373	42,466	35,863	18,932	26,432	25,543
	Median	27,000	27,000	36,000	45,000	36,000	19,800	25,000	26,250
2	Mean	85,729	54,009	126,187	92,967	81,814	55,397	72,482	65,689
	Median	90,000	52,540	132,000	100,000	80,000	56,000	74,000	62,000
3	Mean	157,794	100,190	254,090	171,486	121,587	89,462	140,020	130,633
	Median	151,000	98,400	246,000	180,000	100,000	98,000	144,000	124,000
4	Mean	352,840	214,389	439,334	306,808	241,406	151,604	289,021	276,717
	Median	320,000	200,000	428,000	280,000	240,000	144,000	295,000	280,000
5	Mean	1,170,954	632,310	1,307,414	973,406	588,096	441,581	984,940	818,557
	Median	840,000	480,000	1,260,000	714,000	432,000	310,000	726,000	660,000
Total	Mean	327,551	206,147	453,129	265,012	192,287	138,073	354,822	202,245
	Median	151,000	98,400	295,000	180,000	160,000	96,000	180,000	102,000

Source: Authors' calculations based on the Pakistan Rural Investment Climate Survey, 2005

Annex Table 4.4: Percentage of Firms Identifying Various Investment Climate Factors as a Constraint

	Punjab		Sindh		NWFP		All	
	Small Town	Rural	Small Town	Rural	Small Town	Rural	Small Town	Rural
Public Utilities	45%	43%	29%	34%	21%	21%	35%	37%
Transport	20%	33%	26%	46%	12%	25%	21%	33%
Financing	68%	63%	59%	63%	80%	81%	66%	67%
Marketing Registration, License and Permits	42%	25%	13%	7%	13%	6%	26%	18%
Taxation	1%	0%	3%	2%		0%	1%	1%
Labor	5%	4%	15%	6%	3%	2%	9%	4%
Land	2%	1%	0%	0%	1%	0%	1%	1%
Agricultural Policy	0%	1%		1%	8%	6%	1%	2%
Trade Policy	1%	2%	0%	2%	0%	5%	0%	2%
Environmental Policy	0%	0%	1%				0%	0%
Governance	1%	0%	0%				1%	0%
	35%	23%	20%	14%	3%	0%	24%	17%

Source: Authors' calculations based on the Pakistan Rural Investment Climate Survey, 2005

Annex Table 4.5: Major & Severe Investment Climate Constraints Identified by Enterprises

	Punjab		Sindh		NWFP		All	
	Small Town	Rural	Small Town	Rural	Small Town	Rural	Small Town	Rural
Access to finance	43%	49%	14%	32%	46%	36%	32%	37%
Cost of finance	29%	26%	26%	25%	46%	38%	31%	28%
Loan procedures	17%	19%	40%	37%	40%	37%	30%	33%
Low market demand	19%	14%	5%	6%	1%	1%	10%	6%
Quality of electricity	10%	10%	6%	8%	4%	2%	7%	7%
Access to electricity	6%	8%	8%	14%	8%	9%	7%	12%
Economic policy uncertainty	15%	8%	1%	0%	0%	0%	7%	2%
Crime/ theft	5%	5%	12%	4%	0%	0%	7%	3%
Corruption	1%	1%	12%	3%	0%	0%	6%	2%
Access to markets	9%	6%	3%	1%	0%	1%	5%	2%
Road quality	5%	9%	6%	24%	0%	3%	5%	16%
Market information	5%	1%	4%	6%	0%	0%	4%	3%
Natural gas	8%	12%	0%	3%	1%	1%	4%	5%
High tax rates	1%	0%	7%	5%	0%	0%	3%	3%
Availability of transport	2%	6%	5%	21%	0%	6%	3%	14%
Road Access	5%	7%	1%	8%	0%	2%	3%	6%
Illegal tax levies	3%	1%	3%	0%	2%	0%	3%	0%
Complicated tax rules	0%	0%	5%	3%	0%	0%	2%	2%
Road Blocks	2%	1%	2%	6%	0%	1%	2%	4%
Water Supply	1%	1%	2%	2%	0%	9%	1%	4%
Telecommunications	1%	2%	0%	3%	2%	1%	1%	2%
Postal Service	1%	1%	0%	3%	0%	0%	0%	2%

Source: Authors' calculations based on the Pakistan Rural Investment Climate Survey, 2005

Annex Table 4.6: Access to Markets

	Punjab		Sindh		NWFP		All	
	Small Town	Rural	Small Town	Rural	Small Town	Rural	Small Town	Rural
Population of village/small town	50,841	9,080	38,999	4,379	31,393	4,078	43,026	7,337
Main Markets Households Use to Buy/Sell Goods								
<i>Grocery in the town/village</i>	81%	27%	45%	0%	6%	22%	55%	22%
<i>Grocery in nearby town/village</i>	0%	0%	13%	2%	0%	1%	5%	0%
<i>Commercial center</i>	0%	11%	0%	17%	76%	3%	12%	10%
<i>Nearest city</i>	19%	62%	38%	81%	18%	63%	26%	65%
Median distance to the nearest commercial center (Km)	1	15	19	16	1	14.5	1	15
Median time to the nearest commercial center (minutes)	5	45	30	60	5	25	10	45
Public transport available to commercial center	98%	85%	91%	100%	100%	100%	96%	90%
Median cost of public transport to commercial center (Rs)	10	14	15	20	3	10	15	14
Transport hire cost from the nearest commercial center								
Bus (Rs)	1,500	2,400	2,000	3,000	300	500	2,000	2,000
Three wheeler (Rs)	100	100	200	150	50	100	100	100
Tractor (Rs)	1000	800	600	740	300	500	600	700
Bus fare from commercial center (Rs)	20	15	20	15	3	10	20	15
Bus travel time from commercial center (minutes)	75	45	45	60	5	25	45	45
Three wheeler fare from commercial center (Rs)	16	12	20	15	3	5	15	14
Three wheeler travel time from commercial center (minutes)	60	30	20	35	5	5	17	30

Source: Authors' calculations based on the Pakistan Rural Investment Climate Survey, 2005

Annex Table 4.7: Market Linkages; Geographic Location of Sales and Trading Partners

Village Enterprises	Production			Services			Trade		
	Punjab	Sindh	NWFP	Punjab	Sindh	NWFP	Punjab	Sindh	NWFP
Village Enterprises									
Sales to Buyers in:									
Same village	29	94	25	74	71	56	81	80	87
Same UC, different village	34	2	2	24	25	38	17	16	9
Same <i>Thesil</i> , different Union Council (UC)	12	0	0	1	2	0	1	2	1
Same district, different <i>Thesil</i>	16	0	0	1	0	5	0	2	1
Same Province, different district	8	4	2	0	2	0	0	0	0
Other Provinces	0	0	71	0	0	0	0	0	1
Other countries	0	0	0	0	0	0	0	0	0
Small town Enterprises									
Sales to Buyers in:									
Same town	41	74	21	55	74	60	44	76	39
Same UC, different town	12	20	11	25	17	33	28	19	16
Same <i>Thesil</i> , different UC	42	0	0	16	6	4	26	3	38
Same district, different <i>Thesil</i>	3	1	0	4	4	1	1	2	7
Same Province, different district	2	4	0	1	0	0	0	0	0
Other Provinces	0	0	68	0	0	1	0	0	0
Other countries	0	0	0	0	0	0	0	0	0
Village Enterprises									
Types of Buyers:									
Government	3	0	0	0	0	5	0	0	0
Traders	15	1	0						
Multinationals located in your country	0	0	0	2	0	0	0	0	0
Your parent company or affiliated subsidiaries	2	0	0	1	10	0	0	0	0
Large domestic firms	3	0	0	0	0	0	0	1	0
Agricultural producers and cooperatives	4	17	71	2	0	0	3	0	9
Households	60	75	27	85	79	92	92	77	88
Other (sales to small firms, etc)	13	7	2	10	12	3	5	22	3
Small-town Enterprises									
Government	0	0	0	0	0	1	0	0	0
Traders	6	0	0						
Multinationals located in your country	0	0	0	0	0	2	0	2	0
Your parent company or affiliated subsidiaries	0	0	0	0	0	0	0	0	0
Large domestic firms	0	0	0	0	1	0	1	0	0
Agricultural producers and cooperatives	2	1	0	4	0	0	1	1	1
Households	76	76	29	77	75	84	84	83	82
Other (sales to small firms, etc)	16	23	71	19	24	14	14	14	17

Source: Authors' calculations based on the Pakistan Rural Investment Climate Survey, 2005

Annex Table 4.8: Technological Improvements/Innovations

	Punjab		Sindh		NWFP		All	
	Small Town	Rural	Small Town	Rural	Small Town	Rural	Small Town	Rural
Proportion of enterprises that made improvements/technology innovations	10%	6%	2%	10%	5%	1%	6%	6%
<i>Type of improvements made</i>								
Innovation in product	40%	48%	0%	1%	4%	50%	29%	32%
Improvement/innovation in equipment/machinery	37%	9%	38%	96%	47%	24%	39%	38%
Improvement in workers through hiring	0%	0%	62%	0%	14%	0%	11%	0%
Improvement in management	18%	19%	0%	3%	6%	27%	14%	14%
Other	5%	23%	0%	0%	30%	0%	7%	15%

Source: Authors' calculations based on the Pakistan Rural Investment Climate Survey, 2005

Annex Table 4.9: Participation in Business Associations

	Punjab		Sindh		NWFP		All	
	Small Town	Rural	Small Town	Rural	Small Town	Rural	Small Town	Rural
Proportion of enterprises located in a <i>tehsil</i> with								
<i>Chamber of Commerce</i>	0%	0%	32%	10%	25%	2%	17%	2%
<i>Business association for all types of businesses</i>	43%	2%	79%	51%	100%	100%	66%	29%
<i>Industry specific business association</i>	10%	0%	76%	47%	86%	36%	48%	14%
Proportion of enterprises belonging to								
<i>Any business association</i>	15%	2%	9%	3%	5%	0%	11%	2%
<i>Chamber of Commerce</i>	1%	1%	2%	3%	4%	0%	2%	1%
<i>Business association for all types of businesses</i>	14%	2%	7%	3%	5%	0%	10%	2%
<i>Industry specific business association</i>	1%	0%	0%	0%	0%	0%	0%	0%

Source: Authors' calculations based on the Pakistan Rural Investment Climate Survey, 2005

Annex Table 4.10: Availability and Use of Business Services

	Punjab		Sindh		NWFP		All		
	Small Town	Rural	Small Town	Rural	Small Town	Rural	Small Town	Rural	
<i>Proportion of enterprises located in Tehsils where the following services are available:</i>									
Engineering services	12%	0%	46%	14%	38%	60%	26%	15%	
Management services	0%	0%	56%	16%	33%	28%	21%	9%	
Marketing services	14%	1%	56%	14%	38%	35%	30%	11%	
Accounting services	8%	0%	56%	12%	33%	21%	25%	7%	
Legal services	22%	7%	59%	16%	39%	61%	35%	19%	
Insurance services	17%	1%	58%	14%	100%	100%	32%	15%	
Information technology services	7%	2%	61%	17%	39%	61%	27%	16%	
<i>Proportion of enterprises with business services available within a hour's travel time from town/village:</i>									
Engineering services	59%	4%	13%	6%	9%	7%	33%	5%	
Management services	42%	4%	32%	16%	23%	17%	35%	8%	
Marketing services	23%	7%	32%	19%	9%	17%	24%	11%	
Accounting services	37%	7%	19%	13%	23%	17%	28%	10%	
Legal services	41%	16%	39%	20%	9%	7%	35%	15%	
Insurance services	65%	9%	32%	13%	8%	7%	43%	9%	
Information technology services	55%	8%	37%	19%	8%	7%	40%	9%	
<i>Proportion of enterprises reporting that they needed:</i>									
Engineering services	0%	0%	1%	0%	1%	0%	1%	1%	
Management services	0%	1%	0%	0%	0%	0%	0%	0%	
Marketing services	0%	0%	0%	0%	0%	0%	0%	0%	
Accounting services	0%	0%	0%	0%	0%	0%	0%	0%	
Legal services	1%	0%	1%	0%	0%	0%	1%	0%	
Insurance services	0%	0%	0%	0%	0%	0%	0%	0%	
Information technology services	1%	0%	0%	0%	0%	0%	0%	0%	
Technical support from buyers/suppliers	0%	0%	5%	6%	0%	0%	2%	1%	

Source: Authors' calculations based on the Pakistan Rural Investment Climate Survey, 2005

Note: There are quite a few missing observations for the sections on business services in both the community and enterprise questionnaires. The numbers in the table should be interpreted in the following way: 12 percent of enterprises in Punjab are located in *tehsils* where engineering services are available. The other 88 percent are located in *tehsils* where these services are either not available or respondents in the survey were unaware as to whether these services were available. Similarly 1 percent of enterprises in small towns reported that they needed engineering services, the remaining either reported that they did not need these services or that they did not know if they needed these services.

Annex Table 4.11: Laws and Regulations

	Punjab		Sindh		NWFP		All	
	Small Town	Rural	Small Town	Rural	Small Town	Rural	Small Town	Rural
<i>Proportion of enterprises reporting that laws and regulation affecting their businesses are:</i>								
Highly predictable	4%	7%	4%	7%	44%	46%	11%	15%
Somewhat predictable	62%	50%	67%	67%	26%	24%	58%	47%
Unpredictable	25%	25%	8%	8%	23%	19%	18%	21%
Highly unpredictable	3%	3%	16%	18%	5%	6%	9%	6%
<i>Proportion of enterprises reporting that laws, rules and regulation being implemented in their community are:</i>								
Highly predictable	3%	7%	6%	6%	36%	39%	10%	13%
Somewhat predictable	61%	48%	52%	55%	28%	24%	52%	44%
Unpredictable	26%	26%	22%	24%	28%	25%	24%	26%
Highly unpredictable	3%	3%	16%	13%	5%	5%	8%	5%
<i>A contract offers protection from being cheated---proportion of enterprises that:</i>								
Strongly agree	4%	4%	5%	6%	52%	21%	12%	8%
Agree	63%	53%	52%	67%	38%	56%	55%	56%
Disagree	26%	26%	40%	25%	8%	18%	28%	24%
Strongly disagree	0%	0%	0%	1%			0%	0%
<i>Legal system will uphold contracts and property rights in disputes---proportion of enterprises that:</i>								
Strongly agree	7%	5%	1%	0%	37%	19%	9%	7%
Agree	63%	45%	46%	49%	47%	56%	54%	48%
Disagree	23%	33%	45%	39%	15%	19%	30%	31%
Strongly disagree	0%	0%	3%	9%	0%	0%	2%	1%
<i>Proportion of enterprises that incurred expenses for:</i>								
Providing security	30%	15%	22%	23%	57%	15%	32%	16%
Providing protection payments	15%	7%	50%	34%	9%	5%	28%	11%
Due to theft, robbery, vandalism	0%	0%	1%	1%	0%	0%	0%	0%
Enterprises reporting being a victim of theft or robbery	8%	5%	8%	5%	9%	4%	7%	5%
<i>Proportion of enterprises that resolved dispute using</i>								
Neighbors and friends	4%	2%	1%	10%	1%	0%	2%	3%
Community leaders	0%	0%	3%	7%	0%	0%	1%	1%
Police station	2%	2%	1%	9%	1%	1%	2%	3%
Magistrate court	0%	0%	0%	0%	0%	0%	0%	0%

Source: Authors' calculations based on the Pakistan Rural Investment Climate Survey, 2005

Annex Table 4.12: Social Cohesion

	Punjab		Sindh		NWFP		All	
	Small Town	Rural	Small Town	Rural	Small Town	Rural	Small Town	Rural
<i>Proportion of enterprises located in communities/neighborhoods that are</i>								
Very united	17%	54%	12%	21%	5%	44%	18%	45%
Somewhat united	76%	41%	29%	50%	81%	56%	58%	46%
Affected by some quarrels and conflicts	6%	0%	36%	7%	14%	0%	19%	1%
Affected by great tension and conflict	2%	5%	9%	29%	0%	0%	4%	8%
Affected by conflict and violence	0%	0%	0%	2%	0%	0%	0%	0%
Homogenous	44%	42%	0%	30%	66%	49%	30%	41%
Have problems due to religious/ethnic/social and other differences	5%	7%	67%	85%	24%	66%	33%	31%
<i>Differences that cause problems</i>								
Difference in education	43%	0%	0%	0%	0%	0%	3%	0%
Difference in landholding	18%	20%	42%	37%	7%	37%	36%	35%
Difference in wealth/material possessions	7%	27%	0%	23%	1%	0%	1%	14%
Difference in social status	16%	0%	12%	16%	0%	0%	11%	7%
Difference between men and women	0%	0%	6%	0%	0%	0%	5%	0%
Difference between young and old	0%	0%	0%	6%	0%	0%	0%	3%
Difference in political affiliation	9%	0%	21%	15%	36%	60%	22%	32%
Difference in religious beliefs	0%	0%	19%	0%	0%	0%	15%	0%
Difference in ethnic background/race/caste/tribe	7%	53%	0%	3%	56%	3%	7%	10%

Source: Authors' calculations based on the Pakistan Rural Investment Climate Survey, 2005

Annex Table 4.13: Enterprise Ownership and Start-up Probit Regressions

	Determinants of owning a Non-Farm Business		Determinants of Starting a Non-Farm Business in past 3 years.	
	Rural	Small Town	Rural	Small Town
1+ parent(s) ran a non-farm enterprise	0.387 [2.41]**	0.503 [2.81]***	0.07 [0.30]	-0.035 [0.13]
Age of household head	0.006 [0.99]	0.008 [1.46]	0.023 [2.35]**	0.006 [0.50]
Log (years of education of household head)	0.043 [0.52]	0.075 [1.18]	-0.019 [0.15]	-0.192 [1.69]*
Log (household size)	0.377 [1.84]*	0.524 [3.05]**	-0.137 [0.44]	0.425 [1.44]
Female household head	0.36 [0.79]	-0.536 [1.55]	0.717 [1.09]	-0.784 [1.81]*
Log (household assets)	0.049 [0.97]	0.081 [1.75]*	0.025 [0.43]	0.149 [2.16]**
Acres of land cultivated	-0.055 [3.22]***	-0.002 [0.44]	-0.01 [0.80]	-0.078 [1.41]
Log (distance to nearest town of 100,000 population)	-0.074 [0.87]	0.111 [1.21]	0.002 [0.01]	0.261 [2.03]**
Share of households with electricity	-0.072 [0.17]	1.345 [2.52]**	-0.74 [1.15]	0.947 [1.36]
Share of households with fixed phone	-0.05 [0.12]	0.999 [2.35]**	0.603 [1.12]	0.659 [1.19]
Share of households with cell phone	0.547 [1.09]	-0.3 [0.86]	2.523 [3.49]***	0.017 [0.02]
Community has system of sewage channels	0.001 [0.01]	-0.438 [2.53]**	-0.39 [1.88]*	-0.4 [1.49]
Commercial bank is present	-0.111 [0.59]	-1.178 [3.35]***	-0.326 [1.65]	-1.479 [2.83]***
Number of government. programs in community	0.255 [2.02]**	0.01 [0.12]	0.623 [3.14]***	0.154 [1.29]
Improvements to overall business envir (# in 5 yrs)	0.033 [1.12]	-0.009 [0.58]	0.032 [0.77]	-0.016 [0.47]
Chamber of commerce in <i>tehsil</i>	-0.843 [2.59]**	-0.253 [1.09]	-0.418 [1.11]	-0.372 [1.18]
General business association in <i>tehsil</i>	0.134 [0.44]	0.006 [0.03]	0.352 [0.86]	-0.035 [0.10]
Number of business services avail in <i>tehsil</i>	-0.029 [0.65]	0.036 [0.56]	-0.056 [0.62]	-0.008 [0.10]
Strata==Faisalabad	0.393 [0.69]	0.566 [1.30]	-0.048 [0.05]	0.641 [1.09]
Strata==Attock	0.697 [1.26]	0.918 [2.45]**		0.449 [0.78]
Strata==Cotton	0.784 [1.47]	1.181 [3.14]***	0.944 [1.29]	1.023 [2.18]**
Strata==PunjOther	0.62 [1.29]	0.899 [2.12]**	0.597 [0.87]	0.525 [1.08]
Strata==Sindh	0.903	0.887	1.348	1.17

	Determinants of owning a Non-Farm Business		Determinants of <i>Starting</i> a Non-Farm Business in past 3 years.	
	Rural	Small Town	Rural	Small Town
Constant	[2.11]**	[3.24]***	[2.42]**	[3.43]***
	-2.36	-4.3	-3.261	-4.715
	[2.19]**	[3.65]***	[2.22]**	[3.01]***
Observations	452	452	322	295

t statistics in brackets
* significant at 10%; ** significant at 5%; *** significant at 1%

Source: Authors' calculations based on the Pakistan Rural Investment Climate Survey, 2005

Annex Table 4.14: Labor Productivity Regressions (OLS)

	(1) Small town	(2) Rural	(3) Production	(4) Services	(5) Trade
Ln(Fixed Assets)	0.029 (1.25)	0.042 (1.44)	0.059 (1.55)	0.126 (3.70)**	0.000 (0.02)
Age of firm	0.018 (1.79)	0.011 (1.27)	0.016 (1.66)	0.013 (1.47)	0.017 (1.78)
Manager's experience (years)	0.030 (1.98)	-0.015 (0.91)	0.051 (2.83)**	-0.005 (0.32)	-0.002 (0.06)
Manager's gender	1.413 (1.83)	0.121 (0.25)	1.182 (1.90)	2.254 (1.78)	0.518 (1.38)
Manager's education (none)	-0.686 (2.36)*	-0.650 (1.65)	-0.919 (2.47)*	-0.451 (1.47)	-0.960 (2.66)**
Manager's education (up to secondary)	-0.423 (2.63)*	-0.414 (2.41)*	-0.382 (1.00)	-0.420 (2.40)*	-0.479 (2.36)*
Production	-0.527 (3.56)**	-0.231 (0.95)			
Services	-0.363 (2.04)*	-0.372 (1.88)			
Commercial Bank	0.342 (0.97)	0.391 (3.34)**	0.674 (1.72)	0.945 (4.16)**	-0.154 (0.85)
Internal road: dirt road	0.392 (1.63)	-0.285 (1.92)	0.136 (0.41)	0.003 (0.01)	-0.109 (0.56)
Public transport available	0.658 (3.70)**	0.009 (0.08)	0.483 (1.42)	0.272 (0.94)	0.085 (0.58)
Electricity outages (days/month)	-0.016 (2.07)*	0.002 (0.44)	-0.034 (2.97)**	-0.001 (0.13)	-0.007 (1.28)
% households with fixed-line phones	0.006 (1.63)	-0.002 (0.64)	-0.006 (0.68)	0.005 (1.17)	-0.002 (0.62)
% households with cell phones	-0.006 (1.79)	0.002 (0.59)	-0.003 (0.52)	-0.001 (0.24)	-0.006 (2.03)*
Community conflict	-0.093 (0.26)	0.294 (1.56)	-0.930 (1.33)	-0.286 (1.25)	0.267 (1.34)
Community Population	0.000 (0.64)	0.000 (4.24)**	0.000 (1.54)	0.000 (1.53)	0.000 (1.71)
Distance to city 100K	0.001 (1.12)	-0.001 (1.17)	-0.001 (0.71)	0.001 (0.54)	0.000 (0.48)
Chamber of Commerce	0.548 (2.60)*	0.446 (1.60)	-0.100 (0.16)	-0.186 (0.53)	0.295 (1.61)
Attock	-0.429 (2.36)*	0.545 (2.70)**	0.178 (0.44)	0.022 (0.07)	0.529 (2.30)*
Faislabad	0.138 (1.19)	-0.191 (1.48)	-0.486 (1.54)	0.460 (3.40)**	0.346 (1.75)
Other Punjab	0.532 (3.30)**	-0.001 (0.01)	0.376 (0.74)	0.082 (0.31)	0.311 (1.70)
Sindh	0.072 (0.36)	0.166 (0.57)	-0.638 (1.76)	0.460 (1.86)	0.124 (0.60)
% households with electricity		0.001 (0.26)			
Rural			0.296 (0.61)	0.375 (1.37)	-0.276 (1.56)
Constant	7.734 (7.31)**	10.473 (11.64)**	8.610 (4.60)**	5.575 (3.46)**	10.908 (17.64)**
Observations	623	483	140	401	565
R-squared	0.22	0.19	0.48	0.30	0.17

Robust t-statistics in parentheses

* significant at 5% level; ** significant at 1% level

Source: Authors' calculations based on the Pakistan Rural Investment Climate Survey, 2005

5. PUBLIC EXPENDITURES AND RURAL SERVICE DELIVERY

As mentioned in the previous chapter, inadequate roads, electricity and telecommunications are major constraints on productivity and growth of Pakistan's rural and small-town enterprises. Similarly, low levels of public service related to health and education contribute to a disparity between Pakistan and other south Asian countries on many social welfare indicators. Improving rural service delivery is thus crucial both for economic growth and improved welfare for the poor.

This chapter analyzes this issue by examining: the changes in total fiscal resources available at lower levels of government over time; the composition of expenditures; and constraints to more efficient service delivery. Following a brief examination of devolution in Pakistan, the chapter presents data on total revenues and expenditures at various levels of government; these show that total resources increased at the federal and provincial levels from 2001-02 to 2005-06, but also that the transfer of resources to local governments remains uneven. Based on the results of a 2006 survey of selected district and *Tehsil* Municipal Authority (TMA) governments, the chapter also identifies administrative issues and provides suggestions for reform.

BACKGROUND: DEVOLUTION IN PAKISTAN

International experience demonstrates that decentralization of administrative and financial authority to lower levels of government offers great scope for enhancing efficiency of public-sector service delivery. Decentralization can increase efficiency in administration and allocation, improve equity in service provision, enhance participation and inclusion, empower local stakeholders and accelerate poverty reduction. Local governments are more likely to engage in participatory procedures that can identify local priorities and provide feedback on implementation and progress. Reforming the fiscal framework entails implementing incentives and fiscal arrangements that promote efficient use of resources according to local needs, budgetary certainty, autonomy in preparing the budget and incentives to increase local revenues. Local revenues may also contain intrinsic incentives for efficiency, as local taxpayers are likely to be more vigilant than distant ones. Accountability relationships also can be improved through the political process of citizens influencing policymakers and policymakers influencing service providers.

Pakistan, like many other countries has devolved service-delivery responsibilities to local governments through an elaborate program initiated in 2001. The main features of this program are: restructuring the bureaucratic set up and devolution of administrative authority to the district level and below; refocusing administrative systems to allow public participation in decision-making; facilitating oversight of government functionaries by the monitoring committees of local councils and rationalizing administrative structures to improve efficiency. The program was implemented through creation of three tiers of local governments at the district, *tehsil* and union levels. The most significant change under the new system is the transfer of responsibilities for budgeting, planning and development of service provision, previously decided at the provincial level, to the district governments. Health, education, assessment and collection of land taxes, cesses and agricultural income tax, agricultural extension and farm water management, planning and design of district roads and buildings are all now devolved from the provincial governments to the district governments. *Tehsils* and towns have assumed responsibility for delivering water

and sanitation, drainage, roads under their authority, street lighting and fire fighting.⁷³ No service provision responsibilities have been assigned to the union administration.⁷⁴

The local governments have also been assigned powers to raise additional revenues under the new system and the distribution of resources through the Provincial Finance Commission (PFC) formula⁷⁵ ensures direct distribution of resources from the provinces to local governments as well as distribution among local governments.

Under the new system of government, citizen representation is ensured through direct election of the Union Councilors, and the *Nazims* (elected heads of local government) have been made more accountable to the people. In addition Local Government Ordinance (LGO) 2001 also provides for the existence of numerous new bodies through which citizens are able to access and potentially influence government decisions at the local level. These oversight bodies fall into three broad categories. There are those that provide external checks, like the Monitoring Committees at the district, *tehsil* and union levels. Through these committees citizens are able to influence the performance of service delivery providers through their elected representatives, who are members on these committees. Village Development Councils (VDCs) and Neighborhood Councils are appointed under the provisions of the LGO, which are designed to mobilize community resources. The VDCs may, with funds raised through voluntary contributions or on self help basis, develop and maintain municipal and community welfare facilities and can also assume authority to deliver services in their areas. Last are a group of bodies responsible for community development and management of facilities, The Citizen Community Boards (CCBs), formed voluntarily by citizens to mobilize resources aimed at improving service delivery and conveying community concerns to local governments.

FISCAL OUTCOMES AND ISSUES

Overall fiscal resources in Pakistan have increased at both the federal and provincial levels since 2001-02. Spending on rural development at the federal and provincial levels has increased as well. Total transfers to local government (districts, *tehsils* and unions) varied widely by province, as well as by district within provinces.

Increases in government revenues since 2001-02 have provided the fiscal space for an expansion of expenditures at both the federal and district levels. From 2001-02 to 2005-06, total consolidated expenditures (fiscal and provincial), government revenue and the budget deficit all increased by 23 to 26 percent in real terms. Expenditures grew by an average of 5.9 percent per year and 23 percent overall in the period. The increase in overall spending was largely financed by stronger revenue: 62 percent of the revenue increase came from tax increases; the remainder was derived from non-tax sources. The overall government budget deficit increased by 23 percent in real terms, but remained equal to about one-quarter of total expenditures over the period (Table 5.1 and Figure 5.1)

⁷³ Under the old system these services were simultaneously provided by both the rural and urban local councils and by the respective provincial line departments.

⁷⁴ The federal government has sole responsibility for providing road transport, electricity, energy and telecommunication services. It shares policing and judicial responsibilities with the provincial government, and health, education, water and sanitation provision with lower levels of government. There are therefore multiple levels of government providing the same services.

⁷⁵ The Provincial Finance Commission formula defines the allocation of the transfers of revenues from provincial governments to local governments. See World Bank (2004; Pak Public Exp Mgmt, Vol I).

Table 5.1: Real Federal and Provincial Revenues and Expenditures in Pakistan, 2001-02 to 2005-06, (in billion Rs, 2004-2005 = 100)

	2001-02	2002-03	2003-04	2004-05	2005-06	FY02-06	Percent Change 2002-06
Consolidated							
Total Expenditures	1019.6	1029.4	1019.3	1195.5	1257.6	5.9%	23.3%
Current Expenditures	864.1	907.4	827.1	943.1	970.3	2.7%	12.3%
Development Expenditures	155.8	148.1	174.5	227.7	288.7	18.1%	85.3%
Net Lending to PSEs	-0.2	-26.0	17.7	24.8	-1.4	---	---
Statistical Discrepancy	-14.4	3.7	0.0	78.5	0.0	---	---
Total Revenue	770.2	826.1	873.4	900.0	968.3	5.6%	25.7%
Tax Revenue	590.0	637.0	669.8	659.4	712.0	4.2%	20.7%
Non-Tax Revenue	180.2	189.1	203.7	240.7	256.3	9.9%	42.2%
Surplus/Deficit	-235.0	-207.0	-145.8	-217.0	-289.3	---	23.1%
Federal							
Total Expenditures	768.6	824.6	764.2	823.9	893.1	3.0%	16.2%
Current Expenditures	647.4	687.4	631.3	688.6	691.2	1.3%	6.8%
Development Expenditures	121.2	137.2	133.0	135.3	201.9	10.6%	66.6%
Transfers to Provinces	-216.1	-221.8	-229.1	-245.3	-251.3	12.8%	16.3%
Total Revenues	720.7	772.0	808.5	843.0	892.6	5.3%	23.9%
Tax Revenue	566.8	612.0	632.8	624.8	674.1	3.7%	18.9%
Non-Tax Revenue	153.9	160.0	175.7	218.3	218.5	10.6%	42.0%
Surplus/Deficit	-47.9	-52.6	44.2	19.1	-0.5	---	-98.9%
Provincial							
Total Expenditures	251.3	230.8	237.4	346.9	365.9	12.3%	45.6%
Current Expenditures	216.7	219.9	195.9	254.5	279.1	6.7%	28.8%
Development Expenditures	34.6	10.9	41.5	92.4	86.8	48.8%	150.7%
Total Revenues	265.6	275.9	290.0	302.3	326.9	5.2%	23.1%
Tax Revenue	23.2	25.0	36.9	34.6	37.8	13.9%	63.0%
Non-Tax Revenue	26.3	29.1	24.0	22.4	37.8	4.8%	43.9%
Transfers to Provinces	216.1	221.8	229.1	245.3	251.3	4.1%	16.3%
Surplus/Deficit	14.3	45.0	56.7	-44.6	-39.0	---	---

Source: Pakistan Economic Survey 2002-2003, 2004-2005, 2005-2006.

Notes: Nominal values deflated with National Accounts Index of the Price of Private Consumption;

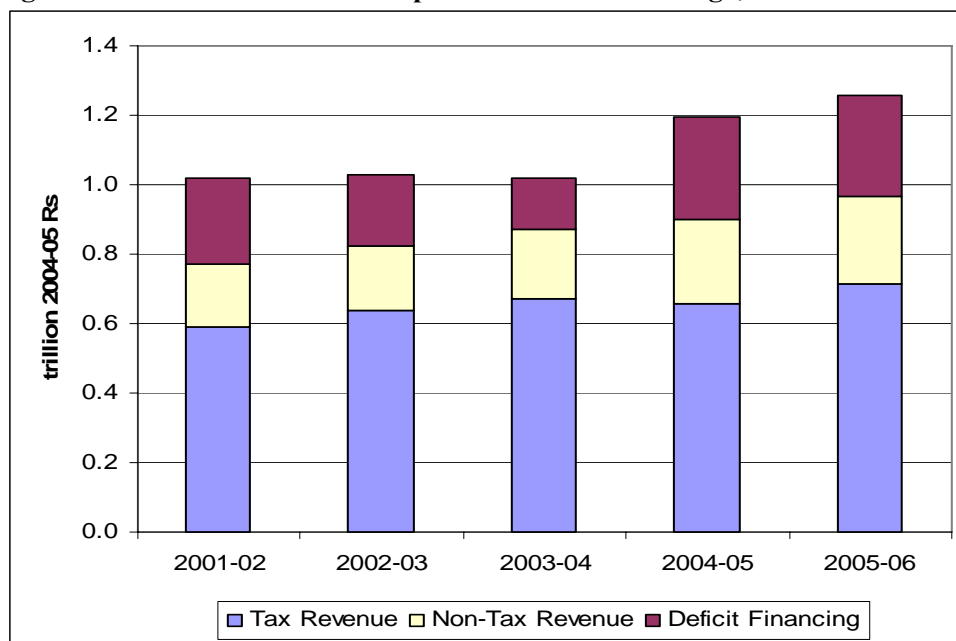
Consolidated, Federal and Provincial Budget Numbers are from Pakistan Economic Survey 2005-2006, Table 4.2.

Federal and Provincial Development Expenditures based on calculations from: Pakistan Economic Survey 2005-2006, Table 4.1; Pakistan Economic Survey 2004-2005, Table 5.9; and Pakistan Economic Survey 2002-2003, Table 5.6.

Transfers to provinces based on Pakistan Economic Survey 2005-2006, Table 5.13; Pakistan Economic Survey 2004-2005, Table 5.10; and Pakistan Economic Survey 2002-2003, Table 5.7.

Transfers to provinces include both federal grants and federal tax receipts.

Figure 5.1: Government Total Expenditure and Financing*, 2001-02 to 2005-06



Source: Pakistan Economic Survey 2005-06.

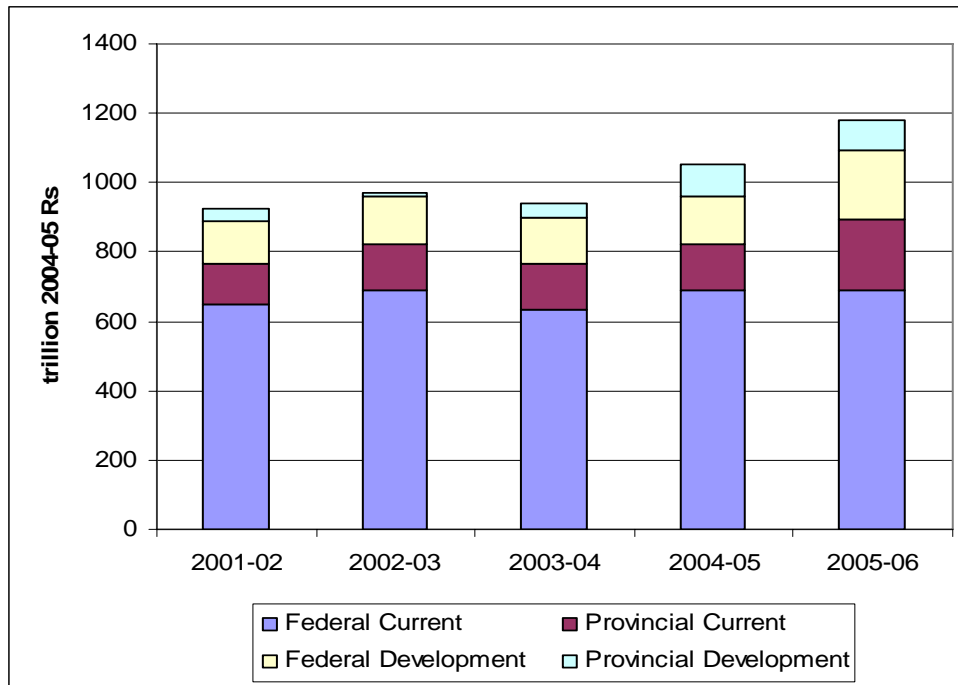
Notes: * Consolidated budget figures. Deficit financing defined as total expenditures less tax and non-tax revenues.

Development expenditures increased by 85 percent (18.1 percent per year) from 2001-02 to 2005-06, reflecting the government's increased commitment to development investments. Growth in development expenditures was particularly rapid at the provincial level, (48.8 percent per year) as compared to the federal level (10.6 percent per year). Combined, current federal and provincial government expenditure increased by only 2.7 percent per year in the same period. As a result, the share of development in total consolidated expenditures rose from 15.3 percent in 2001-02 to 22.9 percent in 2005-06 (Figure 5.2).

Total expenditures by the provinces increased much more rapidly (45.6 percent) than they did at the federal level (16.2 percent), excluding transfers to provinces and net lending to Public Sector Enterprises (PSEs). The rapid growth in provincial expenditures was not due to increased transfers from the federal government, however; these increased by 16.3 percent, (essentially the same rate as other federal spending), (Table 5.2). Rather, Rs 53.2 (2004-05) bn of the Rs 114.6 (2004-05) bn increase was financed by a change in provincial budget surpluses, which fell from 5.7 percent to -10.7 percent of total expenditures from 2001-02 to 2005-06.

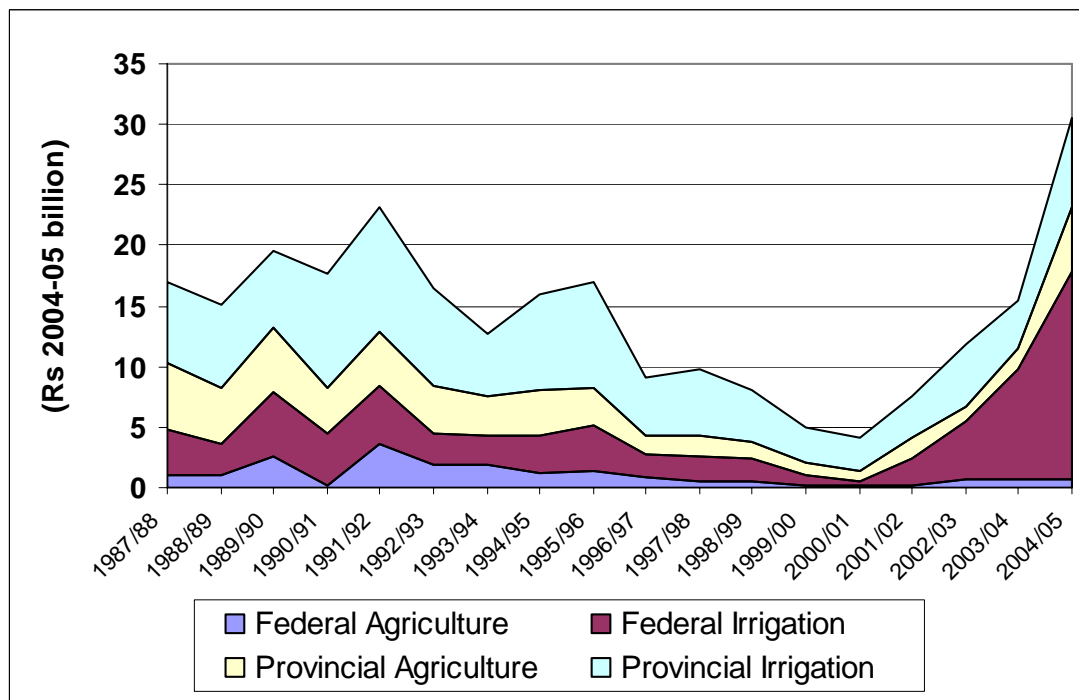
Moreover, federal and provincial development expenditures on agriculture and irrigation, which declined dramatically during the 1990s, have increased sharply since 2001-02 (Figure 5.3). Federal and provincial development expenditures on agriculture and irrigation fell from an average of more than Rs (2004-05) 15 billion between 1987-88 and 1995-96, to less than Rs (2004-05) 5 billion in 1999-00 and 200-01, mainly due to a steep decline in development expenditures on irrigation. Large increases in irrigation expenditures at the federal level, from less than Rs (2004-05) 1 billion in 2000-01 to more than Rs (2004-05) 15 billion in 2004-05 largely account for the more than fivefold increase in total real federal and provincial expenditures on agriculture and irrigation in this period.

Figure 5.2: Federal and Provincial Government Expenditures*, 2001-02 to 2005-06



Source: Pakistan Economic Survey 2005-06.
Notes: * Consolidated budget figures

Figure 5.3: Federal and Provincial Agriculture and Irrigation Expenditures, 1987-88 to 2004-05



Source: Pakistan federal and provincial budgets.

Table 5.2: Devolution in Pakistan: Real Expenditures and Transfers, 2001-02 to 2005-06

	2001-02	2002-03	2003-04	2004-05	2005-06	FY02-06	Percent Change 2002-06
Total Expenditures							
Consolidated (includes net lending to PSEs)	1019.6	1029.4	1019.3	1195.5	1257.6	5.9%	23.3%
Federal	768.6	824.6	764.2	823.9	893.1	3.0%	16.2%
(not including transfers to provinces)	552.5	602.8	535.1	578.6	641.9	2.6%	16.2%
Provincial Expenditures	251.3	230.8	237.4	346.9	365.9	12.3%	45.6%
Federal Transfers to Provinces	216.1	221.8	229.1	245.3	251.3	4.1%	16.3%
Sindh	62.6	65.7	69.9	75.8	76.4	5.6%	22.0%
NWFP	24.4	25.6	27.0	29.2	30.1	5.7%	23.3%
Punjab	108.5	110.5	114.7	122.8	126.9	4.3%	17.0%
Baluchistan	20.6	19.6	18.6	17.5	17.9	-3.9%	-13.4%
Federal Transfers to Punjab	102.9	110.2	114.6	124.6	129.6	6.0%	26.0%
Federal Transfers to Punjab (including grants)	107.5	122.9	130.1	146.9	160.1	10.2%	48.9%
Punjab Transfers to Local Government	60.7	69.5	67.5	63.8	66.7	1.0%	9.8%
Share of Total Consolidated Expenditures							
Federal	75.4%	80.1%	75.0%	68.9%	71.0%	---	-4.4%
Provincial	24.6%	22.4%	23.3%	29.0%	29.1%	---	4.4%
Sindh	24.9%	28.5%	29.5%	21.9%	20.9%	---	-4.0%
NWFP	9.7%	11.1%	11.4%	8.4%	8.2%	---	-1.5%
Punjab	43.2%	47.9%	48.3%	35.4%	34.7%	---	-8.5%
Baluchistan	8.2%	8.5%	7.9%	5.0%	4.9%	---	-3.3%
Punjab (incl. grants, Punjab govt data)	53.0%	69.4%	78.1%	57.4%	60.4%	---	7.5%
Federal Transfers to Provinces	21.2%	21.5%	22.5%	20.5%	20.0%	---	-1.2%
Federal Transfers to Punjab (including grants)	10.5%	11.9%	12.8%	12.3%	12.7%	---	2.2%
Punjab Transfers to Local Government	6.0%	6.8%	6.6%	5.3%	5.3%	---	-0.7%

Source: Pakistan Economic Survey 2004-2005, Table 5.10; Punjab Government data.

Pakistan's per capita total expenditure on agriculture and irrigation remain far below those of other South Asian countries, however (Table 5.3 and Figure 5.4). Per capita total expenditures on agriculture and irrigation in India (including both current and development expenditures) are more than four times those of Pakistan; in Sri Lanka total expenditures are more than double the level of Pakistan. Much of India's current expenditures on agriculture and irrigation are on price subsidies that encourage excessive use of fertilizer and water, and have contributed to depletion of groundwater and other environmental damage (World Bank 2005). Spending on subsidies rather than on investments has contributed to poor agricultural performance in Latin America (de Ferranti et al., 2005). Pakistan lags its neighbors in development expenditures as well, however. Per capita development expenditures on agriculture and irrigation in India are double those of Pakistan; those in Sri Lanka are three times as large.

Table 5.3: Public Expenditures on Rural Development and Social Services in South Asia (US\$/person)

	Pakistan 2000-01	Pakistan 2004-05	Bangladesh 2004-05	India 2004-05	Sri Lanka 2004-05
Agriculture Current	1.84	1.49	1.20	16.08	7.40
Of which: Agricultural Extension	n.a.	n.a.	0.62	n.a.	n.a.
Agriculture Development	0.19	0.51	2.88	0.56	10.50
Of which: Agricultural Extension	n.a.	n.a.	0.46	n.a.	n.a.
Irrigation Current	1.26	1.84	---	3.09	---
Irrigation Development	0.53	2.86	---	6.12	---
Rural Development Current	---	---	1.47	7.47	0.00
Rural Development Capital	---	---	5.55	0.93	0.00
Total	3.82	6.70	12.19	34.26	17.90
Current	3.10	3.33	2.68	26.64	7.40
Development	0.72	3.38	8.43	7.61	10.50
Education Current	8.14	10.15	9.87	17.97	24.88
Of which: Primary Education	3.89	4.50			
Education Development	0.31	3.08	3.33	0.27	7.10
Of which: Primary Education	0.10	0.70			
Health Current	2.19	2.71	1.95	4.92	13.69
Health Development	0.43	0.79	2.26	0.28	6.32
Water Supply Current	0.21	0.18	---	1.89	---
Water Supply Development	0.15	0.12	---	1.06	---
Total	15.42	22.23	17.42	26.39	51.99
Current	10.54	13.04	11.83	24.77	38.57
Development	0.89	3.99	5.59	1.61	13.42
Rural Population as % of Total * (in 2003)	65.9	65.9	73.0	71.7	76.2
Rural Population in Millions	92.8	100.2	101.6	788.7	14.8

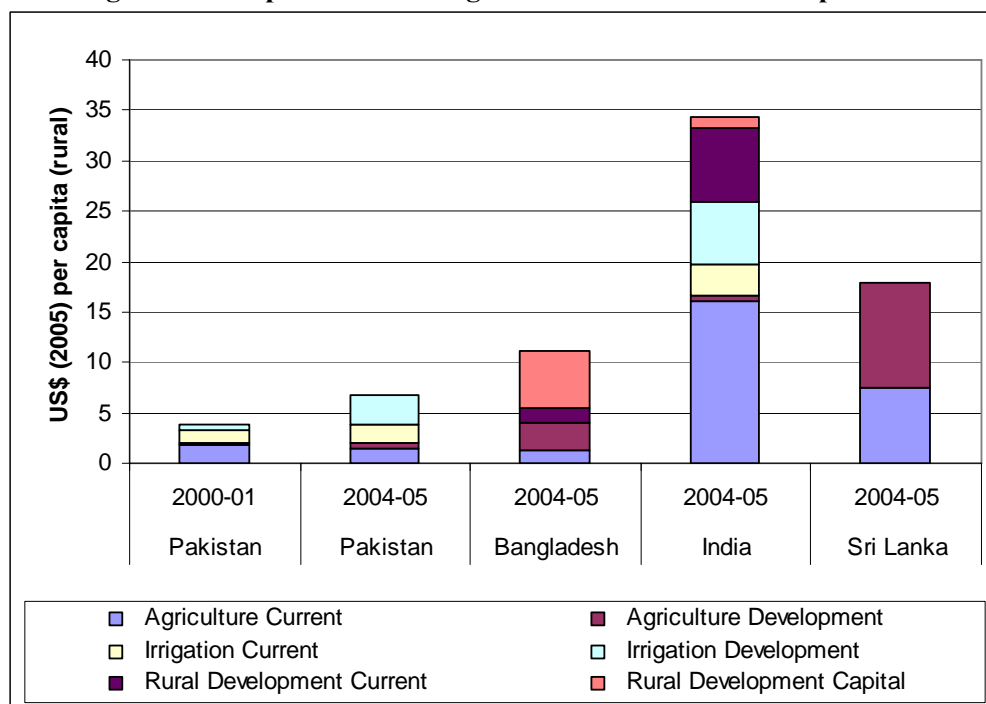
Source: Sri Lanka Central Bank Annual Report 2005; World Bank country office, Bangladesh; World Bank country office, India; and World Bank country office, Pakistan.

Notes: Sri Lanka water supply figures not included.

Sri Lanka and Bangladesh Agriculture figures include irrigation.

Pakistan 2004-05 Figures are preliminary

Figure 5.4: Expenditures on Agriculture and Rural Development in South Asia



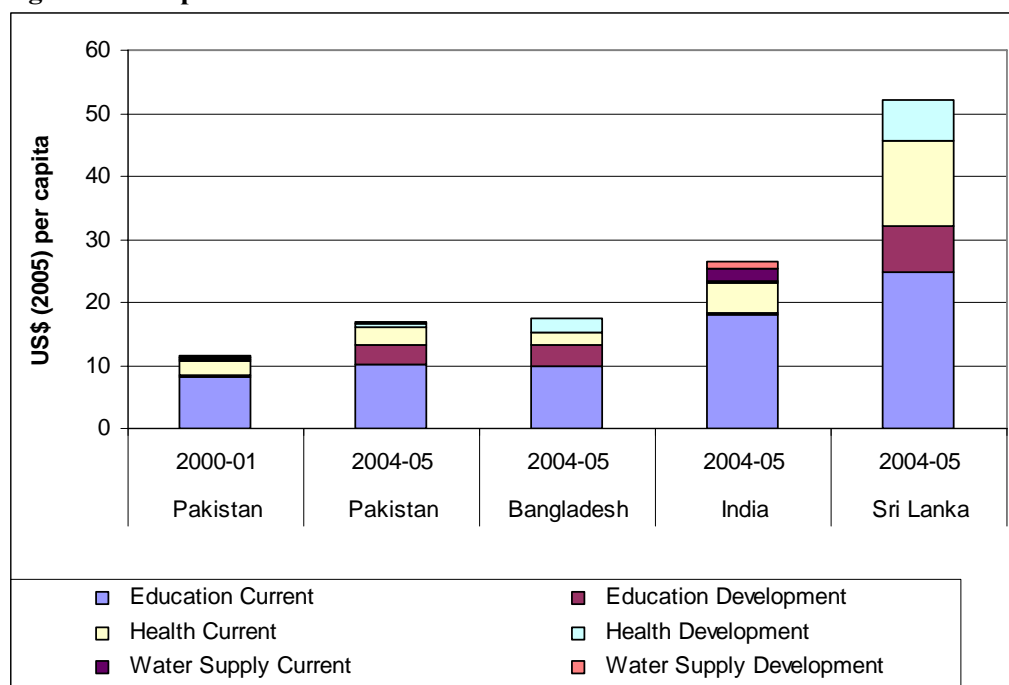
Source: Sri Lanka Central Bank Annual Report 2005; World Bank country office, Bangladesh; World Bank country office, India; and World Bank country office, Pakistan.

Notes: Sri Lanka and Bangladesh Agriculture figures include irrigation. Pakistan 2004-05 Figures are preliminary.

Likewise, in spite of improvements made since 2001-02, Pakistan’s total (both urban and rural) per capita expenditures on health, education and water supply remain below those of India and Sri Lanka (Figure 5.5). In 2004-05, Pakistan spent \$17 per person on these key public services, essentially the same as Bangladesh. In the same year, India spent \$26 per person and Sri Lanka spent \$32 per person, 1.6 times and 3.1 times as much as Pakistan, respectively.

In Punjab, the only province for which detailed time series budget data were available, total expenditures increased by 66 percent between 2001-02 and 2005-06, or 13.1 percent per year. Current expenditures increased by only 19 percent in real terms, however (4.0 percent per year), permitting a more than four-fold increase in development expenditures from Rs (2004-05) 14.3 to 79.2 billion over the period. An increase in federal transfers by Rs (2004-05) 52.6 billion funded most of the 88.0 (2004-05) billion increase in total Punjab expenditures. A further one quarter of the increase in expenditures, however, was financed by a change in the provincial budget deficit, which increased from 0.2 billion to 22.1 billion over the period (Table 5.4 and Figure 5.6).

Figure 5.5: Expenditures on Social Services in South Asia



Source: Sri Lanka Central Bank Annual Report 2005; World Bank country office, Bangladesh; World Bank country office, India; and World Bank country office, Pakistan.

Notes: Sri Lanka water supply figures not included. Pakistan 2004-05 Figures are preliminary

Table 5.4: Real Revenues and Expenditures in Punjab, Pakistan, 2001-02 to 2005-06

	2001-02	2002-03	2003-04	2004-05	2005-06	Growth Rate 2002 - 2006	Percent Change 2002- 2006
Total Expenditures	133.2	160.2	185.5	199.2	221.1	13.1%	66%
Current Expenditures	118.8	131.8	141.9	136.4	141.9	4.0%	19%
Transfers to Loc. Gov	60.7	69.5	67.5	63.8	66.7	1.0%	10%
Development Expenditures	14.3	28.4	43.6	62.8	79.2	52.4%	453%
Total Revenues*	132.9	150.4	173.9	186.5	199.0	10.8%	50%
Tax Revenue	13.0	14.4	19.7	19.1	23.6	15.9%	81%
Non-Tax Revenue	12.4	10.9	18.8	15.3	15.3	7.8%	23%
Transfers to Punjab	107.5	122.9	130.1	146.9	160.1	10.2%	49%
Development Revenue	---	2.2	5.3	5.2	0.0	54.5%	139%
Surplus/Deficit	-0.2	-9.9	-11.6	-12.8	-22.1	---	---

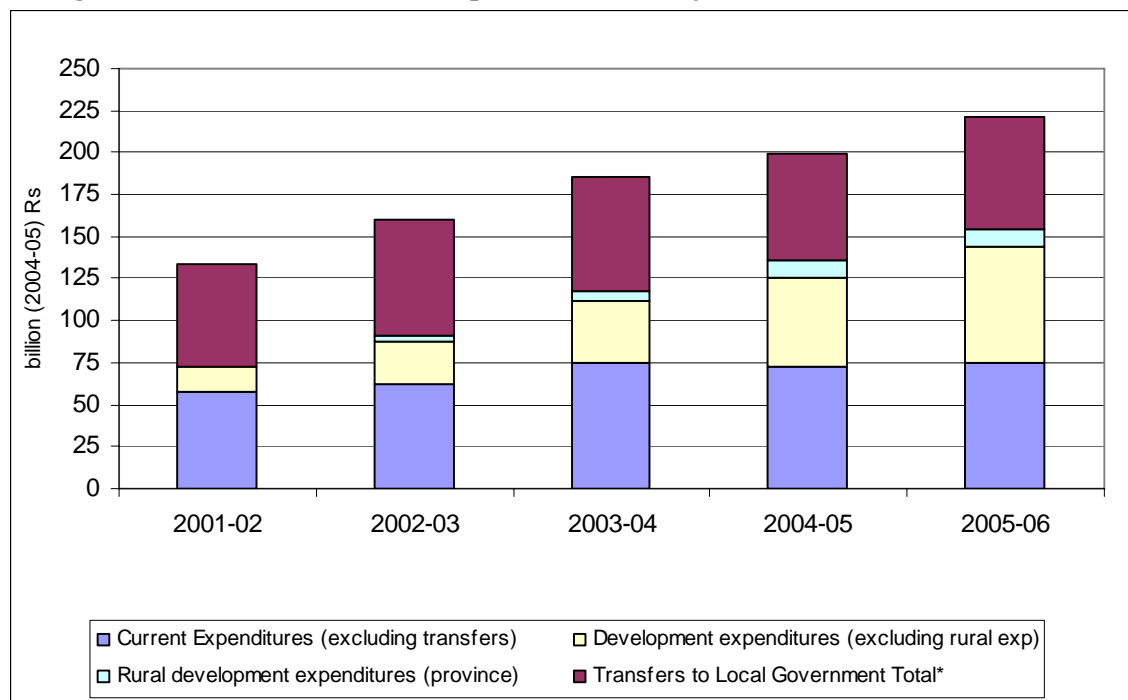
Source: Calculated from Punjab Budget Reports 2003-06; Punjab Economic Report March 31, 2005

Notes: Figures for the growth rate and percentage change of Development Revenues are for 2003 to 2005.

2005-06 data are preliminary. 2001-02 data for Development Revenue are unavailable.

Real values are calculated using a price index of private consumption from the National Accounts..

Figure 5.6: Real Revenues and Expenditures in Punjab, Pakistan, 2001-02 to 2005-06



Source: Calculated from Punjab Budget Reports 2003-06; Punjab Economic Report March 31, 2005

Note: 2001-02 development expenditure data include rural development expenditures.

Punjab's expenditures on rural development as a share of total development expenditures varied between 12 and 15 percent from 2002-03⁷⁶ to 2005-06. Real expenditures on the Rural Development Programme, the largest budget item, almost doubled over the period, from Rs (2001-02) 2.3 to 4.5 billion. Real expenditures on rural water supplies increased even more rapidly, from only Rs (2001-02) 0.05 billion in 2002-03 to Rs (2001-02) 3.25 billion in 2005-06. Livestock spending increased fourfold to Rs (2001-02) 0.72 billion by 2005-06, bringing it almost to parity with the level of spending for crop agriculture and agricultural credit, which was Rs (2001-02) 0.94 billion in 2005-06, having itself increased by 25 percent per year in real terms between 2001-02 and 2005-06.

Total transfers to local government (districts, *tehsils* and unions) varied by province, however. Transfers by the Punjab provincial government changed little in real terms from 2001-02 to 2005-06. The real rupee value of transfers to district and *tehsil* governments increased by only 11 and 9 percent, respectively in the period, and transfers to union level governments actually fell by 12 percent in real terms. Similarly, in NWFP transfers to local governments remained essentially unchanged in real terms between 2002-03 and 2005-06. By contrast, however, in Sindh transfers to local governments in both 2004-05 and 2005-06 were 50 percent or more higher in real terms than the province's average transfers in 2002-03 and 2003-04 (Figure 5.7). India experienced similar problems with the flow of resources to local governments in the early years of fiscal and administrative decentralization (Box 5.1).

⁷⁶

No data were available for 2001-02.

Box 5.1: Decentralization in India

India has made bold efforts to strengthen the voice of the rural poor through decentralization to local governments. A 1993 Constitutional Amendment created a decentralized government structure. Bringing government closer to the rural people improves the match between diverse local preferences and public services. Decentralization strengthens the voice of local people and accountability to them of public sector decision-making. These benefits flow from the democratic process, as well as because of greater transparency, as local actions are more visible to local people.

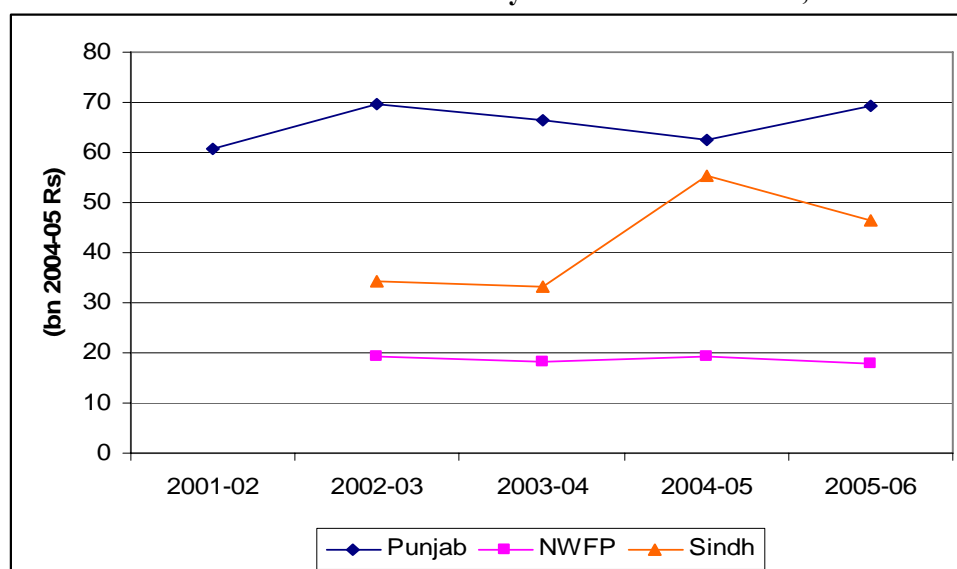
India's size and diversity in terms of ethnicity, language, geography, resource endowment, climate and levels of economic development, makes designing effective central and state level programs extremely difficult. Thus, decentralization has become the critical core of India's strategy to improve service delivery. The 73rd Constitutional Amendment of 1993 created three tiers of democratically elected sub-state rural governments: at district level (district *panchayat* or DP); at block level (block *panchayat* or BP); and at the village level (*gram panchayat* or GP). The Amendment specifies a list of 29 subjects that states can choose to devolve to rural governments at these three levels. Since decentralization was defined as a state subject, different states have pursued varying strategies to empower rural governments.

Rural decentralization in India is constrained by state finances. State fiscal deficits in India hover around 5 percent of GDP. With decentralization defined as a state subject, this raises a critical issue of financing decentralization. As a result, even states that have a relatively well designed and mature decentralization program become captive to the state fiscal situation, and the result is again under-funding of decentralization initiatives relative to entitlement. For example, two states, Karnataka and Kerala, both showed large surpluses at the Gram Panchayat level (the level of local government with discretion). The natural conclusion was that weak capacity at that level led to the accumulation of huge fiscal surpluses. However, further investigation revealed that because of the fiscal situation of the state, actual disbursements to local governments were smaller than the corresponding figures in the state budgets.

To correct this problem, financial management systems need to be updated so as to portray actual fiscal positions of local governments, instead of only budget figures. In addition, accelerating the pace of rural decentralization will require either a debt-restructuring program for the states or improving the financial positions of large cities so as to free up resources at the state level.

Source: Fiscal Decentralization to Rural Governments in India (World Bank 2004).

Figure 5.7: Transfers to Local Governments by Provinces in Pakistan, 2001-02 to 2005-06



Source: Provincial Finance Departments; Niazi et al. 2006.

A 2006 survey of seven districts in Punjab, Sindh and NWFP⁷⁷ highlights the considerable variation in levels of resources available at the district level. Per capita availability of funds ranged from 981 Rs/person in Sargodha (Punjab) to 2000 Rs/person in Chakwal (Punjab).⁷⁸ It is noteworthy that large expenditure increases for health and education at the district level are not apparent in these budgets. On average, 88 percent of the budgetary resources across the seven districts came from provincial government grants.⁷⁹ In two Punjab districts, Chakwal and Bawalpur, however, drawdown of cash balances accounted for 16 percent of resources, reflecting unused funds from previous budgets. On average, current expenditures account for 80 percent of total expenditures; salaries alone account for 63 percent of total expenditures. The share of resources devoted to development expenditures nevertheless varies widely: from 3 percent in Lower Dir (NWFP) and 9 percent in Sargodha to 35 percent in Chakwal (Annex Table 5.1). Likewise, the performance of CCBs in terms of their financial contribution as a percentage of the government financing of development expenditures varies from only 2 to 6 percent in the three sample districts in Sindh up to between 22 and 34 percent in the three Punjab districts.⁸⁰

⁷⁷ Sample districts were Sargodah, Chakwal and Bahawalpur in Punjab; Khairpur, Mirpurkhas and Badin in Sindh and Lower Dir in NWFP. Two *tehsils* from each district were selected for case studies: Sargodah and Silanwali in Sargodah District; Chakwal and Talagang in Chakwal District; Bahawalpur and Ahmedpur East in Bahawalpur District; Khairpur and Kotdigi in Khairpur District; Mirpurkhas and Digri in Mirpurkhas District; Badin and Matli in Badin District; and Temargarah and Samarbagh in Lower Dir District. Field work was conducted from February 9 to March 29, 2006

⁷⁸ This variation is in part by design, as Provincial Finance Commissions (PFCs) awards to districts in Punjab and Sindh take into account district rankings of indicators of health, education, housing, employment and residential services, and those in NWFP take into account a backwardness index. Other factors taken into consideration in PFC awards include tax effort in Sindh, infrastructural deficiencies in NWFP and size of the district in terms of geographical area in Baluchistan.

⁷⁹ It should be noted, though, that special development grants are not consistently recorded across districts.

⁸⁰ As in the case of special development grants, it is likely that CCB resources are not consistently recorded in the government budgets.

An even wider variation in fiscal resources is found at the *tehsil*/TMA level. Expenditure per capita in Digri (381 Rs/person) and Khairpur (361 Rs/person) are more than eight times as high as those in Timergarah and Samarbagh in NWFP (both 44 Rs/person). In part, this difference in resources reflects a greater ability by some *tehsils* to raise their own revenues through local taxes and fees such as urban immovable property tax, cattle *mandi* (market) and *adda* (transport station) fees and rents. Own revenues per capita are highest in the three Punjab district capitals sampled (131 Rs/person) where these account for 48 percent of revenues; by contrast, own revenues are lowest in NWFP at only 28 Rs/capita in the district capital of Lower Dir, or 63 percent of (very low district) revenues. District awards to *tehsils* also vary, from only 11 Rs/capita in the two NWFP *tehsils* sampled to 210 Rs/capita in Mirpurkas and 240 Rs/capita in Khairpur.

Table 5.5: Budgets in Selected *Tehsils* and TMAs, 2005-06

	Punjab Capitals	Punjab Remote	Sindh Capitals	Sindh Remote	Total Capitals	Total Remote
Population (mns)	1.01	0.54	0.41	0.34	0.70	0.41
Budget/capita (Rs)	275	174	268	236	239	182
Expenditure Shares						
Salary	38%	35%	43%	36%	41%	33%
Non-Salary	26%	18%	28%	19%	28%	20%
Development	36%	47%	29%	45%	32%	48%
Total	100%	100%	100%	100%	100%	100%
Revenue Shares						
Grants	33%	47%	62%	73%	44%	55%
Own Revenue	48%	40%	30%	19%	43%	33%
Cash Balance	19%	13%	8%	7%	13%	11%
Total Revenues	100%	100%	100%	100%	100%	100%

Source: TMA budgets; Niazi et al. 2006.

Notes: The total sample includes three remote and three district headquarters TMAs in both Punjab and Sindh, and one remote and one district headquarters TMA in NWFP .

TMAs are unable to tap additional sources of revenues because the tax base is small and taxpayers cannot pay more.⁸¹ For example, the *tehsils* of Sargodah, Silanwali, Bahawalpur, Khairpur, Kotdigi and Mirpurkhas face difficulty in even collecting the existing taxes. Raising revenue through new taxes or higher rates is politically unpopular. Attempts to raise revenues through additional taxes were made in Talagang and Mirpurkhas *tehsils* but could not be sustained due to political pressures to withdraw them. In Mirpurkhas, the cattle *mandi* has been abolished as a result of devolution, thereby eroding the revenue base. By contrast, the resource base in Badin has improved slightly due to inclusion of a cattle *Piri* in its jurisdiction.

In some *tehsils*, the devolution process has resulted in an expanded jurisdictions and responsibilities without a corresponding increase in resources, threatening service delivery to remote areas. In Silanwali and Talagang *tehsils* in Punjab, and Khairpur, Kotdigi and Mirpurkhas *tehsils* in Sindh, government officials reported that providing services to the remote areas now under their jurisdiction has increased costs, and that because of the lack of a

⁸¹ This is the general view from the field and needs to be explored more.

corresponding increase in resources they have been unable to provide adequate services to these areas. Since there is now no formal administrative distinction between rural and urban areas and no mechanism to track spending, it is difficult to earmark resources for these under-serviced areas.

In general, establishment costs (expenditures on salaries and overheads) have increased faster than provincial government transfers to local governments through PFC awards. As a result, development expenditures have tended to rise more slowly than the overall increase in revenues. Nonetheless, the situation for lower tiers of local government is much better than it was previously when they received virtually no transfers from the province except in the form of discretionary, purpose-specific grants. Under the current system, district governments are reimbursed for their actual wage bills and the funding is earmarked for salaries,⁸² while transfers for non-salary part contingencies are made on an incremental basis.⁸³ The district councils have little say in the prioritization of establishment-related allocations, which are incremental and input-focused. Thus the DGs do not exercise control over a large part of their budgets and allocation of resources does not necessarily reflect local priorities.

Although relatively more resources are available for development following devolution, one major reason still cited for inadequate service delivery is that development resources available to the local government remain limited. The development budget is allocated to the DGs and TMAs by the respective PGs through the PFC on a residual basis. Development funds constitute a small proportion, 10-12 percent of DG budgets. Utilization rates are very low, and some districts have accumulated large cash balances because of carry-over from previous years of development funds, including funds for CCB projects. The releases have generally been smooth in Punjab and NWFP but Sindh has faced some problems, with the release of funds occurring late and this has contributed to even lower utilization rates there. Moreover in Sindh these funds are often utilized to finance the DGs' fiscal deficit. TMAs have more development funds at their disposal but local priorities are not always reflected in the allocation of funds.

The transfer of resources through the vertical programs and other higher-level government programs adversely affect LGs' autonomy in preparing development budgets and undermines accountability and operational efficiency. Substantial resources are allocated, especially in the water and sanitation sector, through the Members of the National Assembly (MNAs), Members of Provincial Assemblies (MPAs) and directives of the Chief Minister. A number of donor programs, Punjab Devolved Social Service Program, NWFP-Rural Water Supply and Sanitation Project, Punjab-Community Water Supply & Sanitation Program, Sindh Devolved Social Service Program, Sindh-Presidents' Revamping/Rehabilitation of Irrigation and Drainage Systems, Khusal Pakistan Programme, and the Drought Emergency Relief Assistance project also operate in some districts. All these allocations normally bypass LGs budgets and are spent on programs which have formally been assigned to LGs. It is also not clear how these vertical programs have been treated in the TMA budgets; sometimes they appear with some allocation and in other years they are not mentioned at all. Inter-LG funding comparisons become very difficult because of this varying treatment of funds. Some LGs have welcomed these transfers because they fill the huge gap in development funding but these transfers nevertheless disturb the local planning process and create unwanted liabilities for LGs.

Problems of insufficient finances are particularly acute for TMAs that now formally have responsibility for maintaining water-supply schemes, many of which are old and have very high operation and maintenance costs. Officials in many of the TMAs covered in the study districts stated that they lacked the financial ability to maintain these schemes. There are severe funding constraints in Sargodah, Silanwali, Bahawalpur Ahmedpur and Khairpur, and a number of schemes have been abandoned. Funds are just sufficient to maintain schemes in Talagang, Kotdigi, Badin and Matli, but this leaves no resources for development. Moreover, most *tehsils* lack the financial resources to implement new schemes. As a result, previously planned schemes are either not undertaken or are built with funds from provincial governments, vertical programs, MPA allocations or directives of the Chief Minister. To address this problem, the former Public Health Engineering Department has been revived to undertake water and sanitation projects in some provinces.

Similar problems exist at the village level where most water supply, drainage and sanitation schemes are either non-operational or were very poorly maintained because of ineffective Village Development Committees (VDCs). Most of the water supply and sanitation schemes were constructed by the PHED and later handed over to these committees for maintenance.⁸⁴ VDCs are not able to operate and maintain water supply systems in Sargodah, Silanwali, Talagang, Bahawalpur, Ahmedpur, Khairpur, Kotdigi, and Digri because of a lack of funds. VDCs are also unable to recover user charges from the communities to operate and maintain the expensive facilities built by the PHED. All TMAs were concerned about this and feared that they would be obliged to maintain these schemes in future without additional financial support.⁸⁵

ADMINISTRATIVE ISSUES

Even five years after devolution, there still exists confusion regarding roles and responsibilities of the various levels of government, as well as apparent jurisdictional overlaps. Members of local government staff are still not absolutely clear about their roles and responsibilities and the line of reporting under the devolved system and often look to the District Government for direction. There was also some confusion regarding functions assigned to different levels of government when multiple levels are involved in delivering the same service and the public is unable to attach credit or blame for a particular service to a particular politician. The mismatch between expectations and jurisdictional responsibility creates problems of accountability without responsibility. Many union *nazims* and *naib* (deputy) *nazims* report that voters are demanding services that they have neither responsibility nor resources to provide. Yet, despite their ex officio presence on *tehsil* and district councils, they are not credited with any of the successes of higher tiers of government.

Still, the delegation of power to the local governments has brought decision making closer to the communities and enabled them to access government officials, and there has been some improvement in service delivery. As reported by all *tehsils* (except Bahawalpur) citizens' access to their representatives has increased considerably and problems are solved relatively quickly under the new system. The priorities of local communities are also increasingly reflected in development schemes. There has also been substantial improvement in awareness and knowledge

⁸⁴ In Punjab no funds are being allocated to the VDCs for operation and maintenance while in Sindh they were received funding for maintenance for four years.

⁸⁵ Operation and maintenance are less important in the NWFP *tehsils* as most of the water supply schemes there are spring water gravity supply schemes. There are therefore no user charges for them.

and flow of information across all areas.⁸⁶ In terms of perceptions of improvement in service delivery, this is mixed, with a number of *tehsils* showing improvement while in others the majority of respondents claimed to not have experienced any improvement. Political priorities are reflected in decision making in most *tehsils*. Surveys reveal that councilors are most effective in getting their priorities reflected in development schemes but have no role to play in revenue raising and monitoring.

NGO feedback on whether service delivery has improved and decision making has been placed in the hands of the communities following devolution is mixed. Little improvement is reported in water supply and sanitation in Sargodah, Khairpur Mirpurkhas Badin and Dir. In the other two district, Chakwal and Bahawalpur slight improvements in both decision making and improvement in service delivery is reported. Access roads have improved most sharply in the opinion of NGOs in all districts. This is also reflected in district Annual Development Plans as most of the development funds are allocated to this sector.

The *tehsils* still look toward the District administration for guidance and are dependent on the District in a number of ways. Data indicate that the most common interaction occurs when projects are financed through the DG sources or when it provides technical help in the design of projects as happened in Bahawalpur, Ahmedpur, Mirpurkhas, and Digri. This way the DG can influence where the money is spent and affects the independence of the *tehsil* administration. There are both negative and positive aspects of this linkage. Some *tehsils* are better off as they are able to draw on the larger resources of the DG and undertake costly water and sanitation schemes, which they would not have been able to from their own resources. In others such as Sargodah, Silanwali, Talagang, Digri, and Badin the role of the district is considered an encroachment on the TMA's authority and against the spirit of devolution.

CAPACITY

Staff shortages and lack of appropriate skills are serious constraints to efficient service delivery. The capacity issues at the TMA level are more serious and almost all the TMAs surveyed lacked the capacity to perform their planning functions. Some staff serve in positions that require greater seniority and experience. The key post of Tehsil Municipal Officer (TMO) was vacant in two *tehsils* while officers at a lower grade were serving as TMOs in three *tehsils*. Staff capacity was especially weak in the finance departments.⁸⁷ The planning capacity was consistently a deficiency of TMA staff strength, and the position of Tehsil Officer (TO) in charge of planning was vacant in seven of the fourteen *tehsils* in the study. The TO (Infrastructure) was usually a qualified engineer but all *tehsils* lacked the capacity to deal with the technical aspects of service delivery. There seems to be little attention paid to the post of TO (community development) in most *tehsils*: often the officer was not physically present in the *tehsil* or a junior level staff was assigned these responsibilities.

Weak financial capacity especially at the TMA level adversely affects their performance in many ways. First, it hampers the exploitation of new revenue resources, which requires staff and with the skills to assess the new revenue base. Other key tasks such as preparing a case for

⁸⁶ This was in many ways inevitable with hundreds of union councilors across the entire district but this is also a visible difference from the first three years of devolution experience when improvements were not so widely felt by the stakeholders, as reported in the ADB, DFID, World Bank study (2004).

⁸⁷ In many districts, EDO/TO Finance did not have the required background in finance with no accounts and audits training.

approval by council/PG, arranging for the publicity, conducting public hearings and dealing with public comments have not been adequately done. None of the TMAs have ever made a case for their PFC allocations or transfers. There are also frequently inconsistencies in LG budgetary practices. Financial planning has been ineffective and there has been no planning beyond the yearly budgets. The latter also do not reflect policy priorities.

Provincial governments still hold the Appointment, Promotion and Transfer power over local government and thus exercise a considerable influence over them. Many of the senior staff at TMAs are appointed by the provincial government. The lack of transparency in the APT process, in the form of opaque recruitment and promotion criteria, means that the threat of a transfer can exert pressure on senior staff to accede to the wishes of the provincial government. Transfers of staff are frequent and few officials are able to complete their full term of office.

ACCOUNTABILITY

Beneficiary and stakeholder responses on the council process indicate that it is functioning well and that regular council sessions are held in Silanwali, Chakwal and Matli *tehsils* to debate the development budget, although attendance is thin. The Council process is reported to be effective in Sargodah, Silanwali, Chakwal, Mirpurkhas, Matli and Samarbagh. Overall, 82 percent of the respondents believed that LG decisions are based on political priorities rather than other considerations. Political priorities are reflected in the distribution of funds in the *tehsils* of Sargodah, Silanwali, Chakwal, Digri, Badin and Samarbagh, which have also reported the process to be effective. Accounts and works committees have been formed in two *tehsils* each in Punjab and Sindh and one in NWFP but they have been functional and effective only in Talagang *tehsil*.

The ineffectiveness of the LG councils and their elected committees in overseeing the budgets and ensuring that LG plans reflect peoples' preferences is one of the main reasons cited by the NGOs for service delivery deficits. Overall 70 percent of NGO representatives considered the council process to be weak. The council process is reported to be ineffective for a number of reasons. First councilors are not powerful enough to influence the *Nazim* who controls a large proportion of funds and uses these at his own discretion. Second, councilors are also reluctant to raise their voices against political hand outs because of fear of isolation. Third, council resolutions are not always implemented to the letter. Fourth, councilors lack a strong interest in the process, as the allocations to them, out of the development funds, are small. Finally, access to information is poor and citizens are not aware of their rights.

Focus group discussions with citizens, beneficiaries and councilors show that the CCBs process is gaining ground and a number of projects have been successfully undertaken (Box 5.2). Overall 65 percent of respondents were familiar with the process. However, CCBs have been only partially effective, especially in remoter areas, for a number of reasons. Citizens are not aware of the procedures for CCB formation; in some cases they had no knowledge of the process at all. The registration of the CCBs is to be undertaken by the Executive District Officer EDO of Community Development to whom communities do not have ready access. Registration guidelines are also not always clear to citizens. In remote areas there is the additional problem that people do not have the capacity to develop a PC 1 for projects due to lack of education and were thus unable to utilize funds. In five of the fourteen *tehsils* visited the funds allocated to the CCBs under the development program were not fully utilized. In Sargodah, Talagang, Bahawalpur and Matli *tehsils* CCBs were not effective because of a lack of awareness, while

financial constraints prevented their effective functioning in Silanwali, Ahemedpur and Badin, where poor communities were unable to make the 20% contribution. It was also observed that in Sargodah, Silanwali and Talagang community participation was low as the communities were not united in their efforts. **CCBs are less effective at the TMA level** because they are registered at the district level, and no one guides their formation at TMAs. NGOs have generally not contributed to CCB formation while the community development department (CD) at the district lacks motivation, capacity and mobility.

CCBs have not been a priority for local government leadership and sometimes there is general political reluctance to release government funds to private entities. In some cases hostility has been observed toward CCBs on the part of elected representatives. CCBs have also been the victims in power struggles between district and local governments. However, there are some examples (Khairpur) that suggest innovative leadership would have a positive impact on community mobilization and on service delivery.

Mushawarat Committees, with members from the district *Nazimeen* and the DCO, were envisaged as forums for evolving strategic plans and coordinating the development of entire districts. This is the only mechanism to coordinate the district and the *tehsil* under the new system. **The overall conclusion from field visits is that they do not meet regularly and are not effective.** Only in Khairpur do Mushawarat Committees meet regularly. They are somewhat effective in Khairpur and Mirpurkhas *tehsils*.

The Local Government Commission (LGC), which is a reconciliation mechanism for inter-government dispute resolution, is not effective. In almost all districts and *tehsils*, except the *tehsils* of Bahawalpur in Punjab and Digri in Sindh, it was reported to be totally ineffective. Even in the *tehsils* of Bahawalpur and Digri the LGC was effective only in that a number of cases were referred but there were numerous delays in resolving matters due to a cumbersome lengthy process. All the officials interviewed at the district and TMA level showed no faith in the institution's ability to resolve their inter-government disputes.

SUMMARY OF ISSUES

Budget certainty and predictable transfers are the key to successful decentralization. In Pakistan local planning and budgeting have not been a strong substitute for central direction although local administrations have been given the powers to manage their budgets and raise their own revenues. Lack of adequate resources remains a serious constraint to efficient service delivery. A too-large share of resources are taken up by establishment costs and little is left for operations and maintenance; there are often no funds available for development of infrastructure. Also, many TMAs have a weak tax base and some local taxes and user charges are difficult to impose in practice. The process is highly political and unpopular. The transfers of funds through the PFC award are negotiated on the basis of establishment size and provide a disincentive to reduce costs and improve efficiency. The allocation of resources through vertical programs or through MNA, MPA and CM funds also creates a disincentive for local politicians to exert their authority to improve service delivery in their areas. The budget process under the new system allows the councils to allocate resources according to their priorities and toward service delivery objectives.

Political relationships between the provinces and the local government also has a significant impact on the flow of funds. Jurisdictional overlaps and unclear responsibilities under the new system make it difficult for the public to assign credit or blame for delivery of specific services.

This overlap weakens incentives to perform well on service delivery and may encourage politicians to target services aimed only or largely at their core supporters.

Box 5.2: Citizen Community Boards (CCBs)

Background

Citizen Community Boards (CCBs) were created as part of the devolution process begun in Pakistan in 2001 to address problems of public service delivery, the lack of need-based planning and the overall lack of accountability of government to people. These citizens' groups, comprising at least 25 members, register with government and receive public funds to undertake development projects or monitor public service providers. At least 25 percent of the total development budget of each tier of local government (district, *tehsil*, and union) must be earmarked for CCB projects. Because local governments are required to devote such a large share of their annual development budgets to CCB projects, they have an incentive to include CCBs in the decision making, planning, implementation, and monitoring of development process. CCB development funds cannot be re-appropriated for other activities if unused by the end of the fiscal year and must be carried forward to subsequent financial years.

Current Status

As of 2006, over 25,000 CCBs have been registered in Pakistan. Thousands of these have formed partnerships with government for community driven development and projects have been launched and completed. In these projects, CCBs are required to contribute at least 20 percent of the total capital costs of the project. Participation of the CCBs has also led to increased use of appropriate technologies, introduced the concept of service standards, and strengthened operation and maintenance undertaken by project users through the CCBs.

A recent study supported by the World Bank at the request of the Government of the Punjab suggests a need to simplify the systems and procedures related to CCBs (especially registration and project execution). A technical or financial cap also is needed on CCB projects to reflect communities' ability to implement projects. Weak field outreach of government and lack of adequate evaluation systems are other major drawbacks. Good CCB practices occur mainly in districts where there is a strong political will and commitment. CCBs themselves could be strengthened, however, by making them more broad-based; at present, they are driven mostly by a few community activists.

Looking Ahead

The CCB idea is innovative and ambitious and appears already to be taking off. However, true community participation as an integral part of the work of local governments will require a continuous review and revision of rules, procedures and partnership arrangements between government and CCBs, as well as a robust monitoring and evaluation system. In many cases, it would also be useful to have an interlocutor between CCBs and the government to facilitate interaction between them. Finally, project standards and written agreements that take into account community capacities and clearly delineate responsibilities for projects between CCBs and government could improve transparency and accountability for individual projects.

Staff capacity, especially at the TMA level is not strong and many local government officials lack the managerial skills to undertake their increased responsibilities under the devolved system. Since ATP powers remain with the provincial government after devolution there is pressure on the senior staff to adhere to the demands of the provinces. Many water supply and sanitation schemes are outdated and expensive to maintain.

POLICY IMPLICATIONS

To improve the resource position of the local governments and to ensure their financial autonomy, more and more predictable resources should be made available to them.

Allocations through pre-determined and pre-announced capital budgets will ensure that LGs know in advance what financial resources are available to them and plan accordingly. Autonomy and flexibility can also be ensured by allowing LGs greater local discretion over the use of funds and by ensuring a more meaningful planning process. Incentives for more efficient use of resources may be provided in the form of performance indicators into the grant system, e.g., development expenditure allocations for good performance; and by linking LG performance to a range of criteria, such as quality of planning, fiscal effort, compliance with procurement procedures, financial management, transparency, and operations and maintenance arrangements. A block grant funding approach will also encourage LGs and communities to focus efforts on *mobilizing their own resources* to complement this amount and shift the focus of LG politicians away from lobbying for funds from higher level politicians. As a substantial amount of funds is channeled through the federal government, providing information on vertical programs and converting existing vertical programs into grants, or alternatively making LG managers responsible for them will give LGs more control over their resources and thus greater autonomy. Making more resources available to the LG and ensuring the allocation of operational funds to VDCs will help maintain and manage public facilities.

Strengthening LG capacity for finance and planning on a priority basis will ensure better budget preparation and implementation; planning can go beyond assessment and look at such issues as appraisal, cost-benefit analysis, and O&M arrangements. *Demand-driven capacity-building* can play an important role in optional or location-specific needs. Giving APT powers to local governments and improving the transparency of the APT process will ensure that there is no interference from higher levels of government in terms of appointments.

Monitoring and evaluation capabilities should be enhanced to improve quality of development spending. Monitoring committees should have a formal role in developing sector budgets and receive training in sector specific plans and budgets. Requiring Executive District Officers (EDOs) to report on sector performance to Monitoring Committees, providing councils with resources to follow up reports and complaints, and giving councils the authority to take action against EDOs will all also improve accountability and increase citizens' power over service providers.

Accountability can be increased through increased dissemination of information and greater community involvement. Publishing district and TMA plans, budgets, transfers to service providers, sector expenditures and performance reports, and encouraging the local media to discuss issues will improve access to information and make the local government system more transparent. Likewise, CCBs can be made more effective by publishing and disseminating widely user-friendly guidelines for CCB processes, developing training programs for councilors to improve their awareness and ensuring implementation of the LGO provisions for CCB funding.

Annex Table A5.1: Real Expenditures and Revenues in Punjab Province, 2001-02 to 2005-06

	2001-02	2002-03	2003-04	2004-05	2005-06	Growth Rate FY02-06	Change FY02-06
Total Expenditures	133.15	160.24	185.48	199.23	221.13	13.1%	66%
Current Expenditures	118.83	131.83	141.90	136.38	141.89	4.0%	19%
Salaries							
Other							
Transfers to Local Government Total*	60.74	69.55	67.53	63.81	66.69	1.0%	10%
- District Governments	53.12	58.29	58.31	54.79	59.00	1.5%	11%
- Tehsil/TMA's	4.65	8.16	5.06	4.88	5.06	-3.4%	9%
- Union Administrations	2.98	3.10	2.93	2.71	2.63	-3.7%	-12%
- Other		0.00	1.23	1.43	0.00		
Development Expenditures	14.33	28.42	43.58	62.85	79.24	52.4%	453%
Agricultural/Rural Total*		3.58	6.02	9.48	10.11	42.9%	183%
- Agriculture and Agricultural Credit	0.52	0.74	0.89	2.12	0.94	24.9%	81%
- Livestock Development		0.17	0.16	0.45	0.72	71.1%	326%
- Forestry/Wildlife/Fisheries		0.08	0.05	0.14	0.44	81.9%	423%
- Rural Dev. Programme		2.28	3.92	4.63	4.52	24.8%	98%
- Rural Water Supplies:		0.05	0.81	1.81	3.25	278.7%	6380%
- Urban Water Supplies:		0.23	0.01	0.63	0.73	128.9%	218%
- Irrigation	0.26	0.25	0.19	0.33	0.24	5.5%	0%
Other		24.84	37.55	53.37	69.13	40.8%	178%
Total Revenues	132.94	150.39	173.88	186.46	199.01	9.5%	32%
Current Revenues	132.94	148.23	168.61	181.30	198.97	10.6%	50%
Federal Tax Receipts	102.86	110.20	114.63	124.57	129.58	6.0%	26%
Federal Grants	4.62	12.75	15.44	22.28	30.50	54.2%	560%
Provincial Taxes	13.03	14.40	19.71	19.15	23.61	15.9%	81%
Provincial Non-Tax Receipts	12.42	10.88	18.84	15.30	15.28	7.8%	23%
Development Revenues	0.00	2.16	5.26	5.16	0.04	-69.9%	-98%
Current Surplus/Deficit	14.11	16.41	26.71	44.93	57.08	46.3%	304%
Total Surplus/Deficit	-0.21	-9.85	-11.60	-12.76	-22.12		125%

Source: Calculated using Punjab Budget Reports 2003-06; Punjab Economic Report from March 31, 2005.

6. SOCIAL MOBILIZATION AND ENHANCING LIVELIHOODS

Numerous government and non-government programs and approaches have been used to promote rural development and poverty alleviation. Among these have been initiatives designed to build rural infrastructure, mobilize communities, enhance access to rural finance, and provide a social safety net. This chapter provides an overview of the major programs in Pakistan and underscores the importance of social mobilization in creating effective demand for public services at the local level. Other direct interventions aimed at improving welfare of the poor are also examined, including micro-credit programs, safety nets and programs targeted at disadvantaged groups, particularly heavily indebted laborers.

MAJOR RURAL DEVELOPMENT PROGRAMS IN PAKISTAN

Pakistan has a long history of major rural development programs involving various approaches, but most have had only limited success. Early programs were characterized by a top-down planning process with little input from the rural communities. Over time, these programs have come to involve increased participation by rural communities and NGOs in planning and implementation. The devolution process begun in 2001 institutionalized efforts toward greater involvement by local governments and communities in development programs and public service delivery (Box 6.1).

Spending on agricultural and rural development, including both government current and development expenditures on agriculture and irrigation, and major non-government programs, totaled Rs 59 billion in 2004-05, or about 0.9 percent of Pakistan's GDP. Government expenditure on agriculture and irrigation, both current and development, accounted for 71 percent of this total: government expenditures on irrigation alone accounted for 40 percent of total spending (both government and non-government) on rural programs (Table 6.1 and Figure 6.1).

Nonetheless, several ad hoc development programs are ongoing, although these function outside the main Annual Development Programme framework and established government department budgets at the provincial or local government levels. These programs, such as *Khushal Pakistan-I*, while potentially more responsive to local needs (to the extent that local groups have access to high level elected government officials), may result in projects that are inconsistent or incompatible with overall development strategies or priorities (Box 6.2).

Box 6.1: Rural Development Programs in Pakistan

Numerous rural development programs involving various approaches, donors and government administrations have been implemented in Pakistan, but generally with only limited success. The first major program, the **Village Agricultural and Industrial Development Programme (V-AID)**, from 1953-1962, was designed to increase agricultural production, establish rural small-scale industries and provide social and physical infrastructure through village councils, youth clubs, cooperatives and social centers. Subsequently, the **Rural Works Programme** was launched in West Pakistan in 1963, after initial success in East Pakistan (current-day Bangladesh) the previous year. Although this program made an impressive contribution to the development of local infrastructure, recourse to local resources for repairs and maintenance reduced the long-term impact of the investments. In 1972, the initiative was renamed **the Peoples Works Programme** and placed under the Federal Ministry of Finance and Planning, where it remained until 1983. Projects under the Peoples Works Programme, which was concurrent with the Integrated Rural Development Programme (1972-80), included road construction, school buildings, small irrigation dams, drinking water facilities and other physical infrastructure, although in many cases, other necessary inputs and services were not provided.*

Numerous broadly similar short-lived initiatives were launched in the mid-1980s. The **Five-Point Special Development Programme** (1985-88) was later integrated into other existing development programs: the **Peoples Programme** (1989-90) and subsequently the **Tameer-e-Watan Program/People's Programme** (1991-99). These programs generally included a broad range of rural development activities, among these education, health, roads, electrification, water supply and sanitation.

The **Social Action Programmes (SAP) I (1992-93 to 1995-96) and II (1998-99 to 2003-04)** were designed to expand access to basic services for the poor, particularly education and health for women and girls, and improve service quality; these were intended to include involvement of NGOs, the private sector and community participation to build political consensus and ensure bureaucratic support. Delays in funding and other implementation problems hampered SAP-I, particularly federal programs for population welfare and health.¹ SAP-II had a greater focus on technical and vocational education and on improvements in the quality of service delivery. Implementation of SAP was decentralized to the provincial and district levels for the majority of relevant expenditures, consistent with the government's devolution policies formally adopted in 2001.

The **Khushal Pakistan Program** (Pakistan Welfare Program, January 2000 to June 2002) provided Rs 36 billion during this period for small-scale public works schemes (Rs. 0.05 million to Rs. 5 million per scheme in rural areas and Rs. 0.05 million to Rs. 8 million per scheme in urban areas). The **Tameer-e-Pakistan programme (TPP)**, a federal program begun in February 2003 which was later renamed the **Khushal Pakistan Programme-I (KPP-1)**, initially provided Rs 5 million in 2003-04 to each Member of the National Assembly (MNA) for local development schemes. The amount per MNA has increased over time, and the total budget equaled Rs 4.42 billion in 2005-2006.

* An assessment by Nadeem (2003) points out a problem encountered in many top-down development efforts: "...the programme was riddled with irregularities in the choice of projects, determination of priorities and locations by politically influential people with little regard for the needs of the community, overwhelming reliance on contractors rather than on project committees, and preference for large projects as well as widespread corruption and misuse of public funds."

Table 6.1: Major Government and Non-Government Rural Programs in Pakistan, 2004-05

	Amount (Rs million)	Share (percent)
Federal Government	10,307	18.8
Agriculture	1,843	3.4
Current	1,233	2.3
Development	610	1.1
Irrigation	8,464	15.5
Current	101	0.2
Development	8,363	15.3
Federal Special Programmes	7,840	14.3
Khushal Pakistan Programme I	5,340	9.8
Khushal Pakistan Programme II	2,500	4.6
Provinces	31,521	57.6
Agriculture	16,414	30.0
Current	11,137	20.3
Development	5,277	9.6
Irrigation	15,107	27.6
Current	7,780	14.2
Development	7,327	13.4
Rural Support Programmes	1,000	1.8
Cost of Public Infrastructure Schemes^a	1,000	1.8
PPAF	4,063	7.4
Micro-credit	3,106	5.7
Community Physical Infrastructure	575	1.1
Capacity Building Assistance	382	0.7
Total Rural Expenditures	54,731	100.0
Current (Government)	20,251	37.0
Development (including RSPs, PPAF)	23,534	43.0
PPAF Micro-Credit	3,106	5.7
Government Special Programmes	7,840	14.3

Source: Government of Pakistan, Ministry of Finance and Provincial Departments of Finance data; RSP website; Pakistan Poverty Alleviation Fund (PPAF) website .

Notes: ^a Estimated based on cumulative figures and information from annual reports. Note that RSP figures do not include credit disbursed.

In addition, several large NGO programs supported by international donors have undertaken major rural development efforts in Pakistan in parallel with government programs. The most notable of these are the Aga Khan Rural Support Program (AKRSP), the National Rural Support Programme (NRSP) and various regional Rural Support Programmes (RSPs). These programs have achieved substantial success in organizing rural communities, building local community infrastructure and delivering basic health services. For the most part RSPs, like the special programs outside the ADP framework, operate largely in parallel with local government.

Box 6.2: Khushal Pakistan Programs I and II

The federal government finances two parallel programs for the development of municipal services in the country, the Khushal Pakistan Programs, KPP-I and KPP-II. The Khushal Pakistan Program was formerly called the Tameer-e-Pakistan program under the Nawaz Sharif government.

KPP-I is managed by the federal department of Local Government and Rural Development (LGRD). Under KPP-I, each of the 342 members of the National Assembly (the lower house) and each of the 100 members of the Senate (the upper house) receive Rs. 5 million per year to carry out minor development projects in their constituencies.

Each MNA and Senator identifies two to three development schemes in his or her constituency each year and submits these schemes to the federal LGRD department. Each MNA and Senator must also identify the agency through which he or she wishes to execute a project, whether at the federal, provincial, district or *tehsil* level. The relevant district or *tehsil* governments do not have any control over the identification and execution of these projects.

KPP-I covers multiple sectors like health, education, sanitation, roads, electrification of villages, gas, and telephones, although most projects involve improvements to small roads and drains.

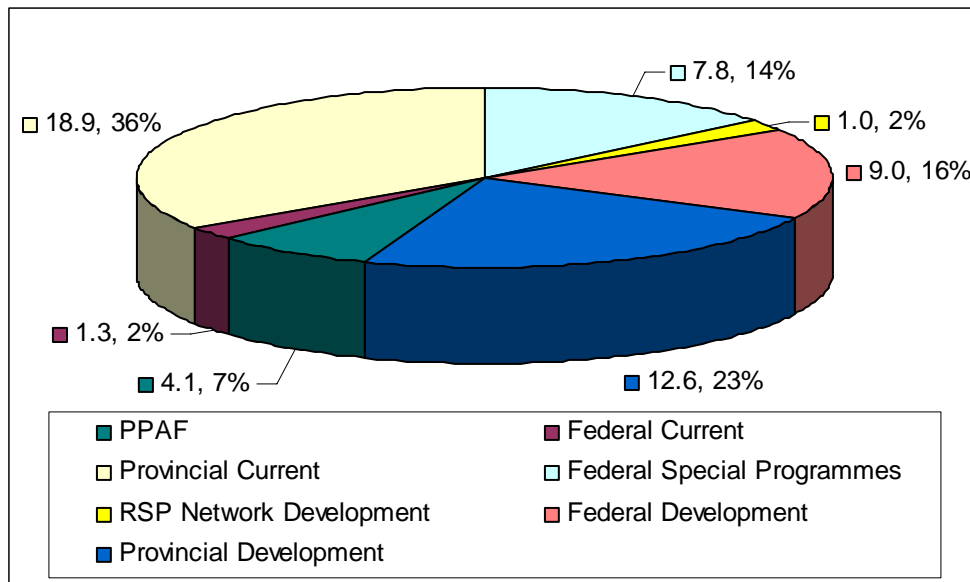
KPP-II, also called the Roshan Pakistan program, is managed by the Prime Minister-Secretariat in Islamabad and deals primarily with the development work carried out under the Prime Minister's directive. Most of these directives are issued as political instruments during public meetings held by the Prime Minister or the President during their visits to various parts of the country.

Source: Stone et al. 2006., *Assessment Report: Pakistan Devolution Support Project, prepared for USAID.* Washington, D.C.: The Urban Institute (unpublished report).

SOCIAL MOBILIZATION AND RURAL LIVELIHOODS DEVELOPMENT

A major reason for the limited success of rural development efforts in Pakistan and many other countries is a lack of effective participation and influence by rural poor households in development programs and rural society in general. Too often, a top-down approach is implemented—one that treats the rural poor simply as beneficiaries of public programs supplied by the government. Instead, the development paradigm should be one that puts the household and its community at the center of development initiatives. Empowering the rural poor to take on this role, however, requires collective action and social mobilization, central features of Pakistan's Rural Support Programmes (RSPs), (Box 6.3). Not only do strong institutions help to create effective demand for public services and hold governments more accountable to their constituencies, these institutions can increase market power and enhance business opportunities for the poor.

Figure 6.1: Major Government and Non-Government Rural Programs in Pakistan, 2004-05



Source: Government of Pakistan, Ministry of Finance and Provincial Departments of Finance data; RSP website; PPAF website.

Social mobilization, along with economic empowerment and graduation, should be at the heart of the rural livelihood development strategy. The benefits of broad economic growth trickle down very slowly when the poor have little access to key physical, social and financial endowments. To overcome highly unequal distribution of these endowments and achieve rapid pro-poor growth, poor people need new opportunities to organize, to generate business and to link with mainstream development activities. Social mobilization, as a way to develop institutions *of* the poor as opposed to institutions *for* the poor, is a central component of effective rural livelihood development. Mobilizing poor people provides them with the “voice” and the scale required to more effectively engage with the range of institutions and individuals providing public and private services. A second component, economic empowerment, through micro-credit, grants or skills training, facilitates access to assets, increases income, and demonstrates creditworthiness of individuals and groups. Ultimately these self-help groups may graduate to form other federative and associative movements involved in income-earning activities including public-private partnerships, various types of franchising and contract farming arrangements.

The work of the AKRSP, which was established in 1982 by the Aga Khan Foundation to work in remote northern regions of Pakistan, exemplifies this approach (Box 6.4). The AKRSP’s program comprises seven major components: institutional development and social organization; women and development; mountain infrastructure and engineering services; natural resource management; human resource development; credit and savings; and enterprise development. With the active involvement of communities, the program has constructed irrigation channels, introduced new crop varieties, and essentially operated an extension service for poor farmers, contributing to a more than doubling of per capita income in program villages in northern areas and Chitral. Moreover, the community organizations created are increasingly recognized as partners of NGOs and government departments in the planning and implementation of government programs.

Box 6.3: Social Mobilization and the RSPs

Social mobilization, which can be defined as the enhancement of a community's capacity for undertaking collective action for its own betterment, is a central pillar of the Government's Mid-Term Development Framework (2005-10). The MDTF explicitly recognizes the need to reach each poor household through a concentrated process of social mobilization: "Pro-poor policies cannot be effective without creating strong outreach mechanisms in each village through which people can interact with government."

Social mobilization is the primary means by which a community's capacity for collective action is harnessed and strengthened—creating the basis for sustainable welfare impacts as well as broader social and political empowerment. Effective mobilization has been able to achieve this by reducing information problems (eliciting development priorities directly from communities and allowing communities to identify projects and eligible recipients of private benefits), expanding the resources available to the poor through credit, capacity building, and occupational training, and strengthening the civic capacities of communities by nurturing the organizations that represent them.

Mobilization of economically, socially or politically marginalized groups has been an integral part of Pakistan's Rural Support Programs (RSPs), non-governmental organizations registered as "not for profit" joint stock companies with the securities and exchange commission of Pakistan. All RSPs have independent and autonomous boards of directors that work in a voluntary capacity and a team of highly qualified professionals. All RSPs share a common objective to reduce poverty and improve the quality of life of the rural poor. However, given the diverse socio-cultural milieu in Pakistan, their strategies are context specific and this is one reason why they replicate rather than expand. Since creation of the AKRSP in 1982, the number of RSPs in Pakistan has now reached 10.

The RSPs see their main strategic focus as the "provision of social guidance for community mobilization and organization leading to community empowerment". A second strategic goal is to increase communities' income-earning potential through micro-credit, grant funding of community physical infrastructure, capacity building and training for employment. A third strategic goal is to enhance community access to available public services.

All interventions are identified in partnership with organized communities. Support extended by RSPs to communities is typically in the form of technical and financial support for building physical village infrastructure, provision of micro-credit, support in the natural-resource sectors and small-enterprise development and support to poor communities in the social sectors. RSPs also act as facilitators among government, other development organizations and organized communities to improve service delivery to the grassroots.

An evaluation of the RSP program by the World Bank in conjunction with the Pakistan Poverty Alleviation Fund is currently underway. The evaluation covers four main areas: (a) the returns to social mobilization—focusing in particular on the *quality* of the institutions created by the program as demonstrated by their internal structure and dynamics, their ability to engage in collective action, and their ability to link with local government and ensure more effective and equitable delivery of public services and program benefits; (b) performance of community infrastructure schemes carried out by the RSPs relative to similar schemes delivered by the more traditional 'top-down' delivery mechanisms of the government; (c) mechanisms that are likely to enhance the sustainability of the program and its impact on poverty; (d) how the quality of facilitation carried out by field staff can be optimized in a context of rapid expansion and scale up.

Box 6.4: Aga Khan Rural Support Programme (AKRSP)

The Aga Khan Rural Support Programme (AKRSP) was launched in 1982 for the purpose of implementing a rural development program in the Northern Areas of Pakistan. The essential elements of the AKRSP are the establishment of effective Village Organizations (VOs). Each VO starts its operation with one grant-assisted productive physical infrastructure project. Women's VOs focus on various aspects of raising women's productivity and welfare. Examples of the activities in which these organizations are engaged are: (i) introduction and dissemination of improved varieties and cultivation techniques for crops; (ii) improved livestock husbandry practices; and (iii) new productivity-raising technology for apricot-drying tents, nut-cracking machines, and butter-churners. AKRSP assists village organizations to obtain access to institutional credit by acting as a loan guarantor through the promotion of savings by members, which serve both as a form of loan collateral for credit and to provide supportive marketing services for different products.

The savings and credit scheme of the AKRSP is based on a system of collective savings and borrowings. Each member deposits his or her savings with the manager of the village organization. The VO's collective savings are deposited in a single account held at a commercial bank. Credit facilities are extended in a similar manner. The VO will then take out a single collective loan and disburse sub-loans to members according to individual's credit need. This system minimizes the transaction costs for borrowers in both savings and borrowings. Due to peer-group pressure, the transparent nature of the credit operations, and the group guarantees for loans, loan repayment rates are almost 100 percent.

Based on substantial positive results from the social mobilization, group-based savings and credit programs and other activities of the AKRSP, a National Rural Support Programme (NRSP) was begun in 1991 and expanded in 1992 with a grant from the Government of Pakistan. NRSP is building a network of grassroots organizations that will plan and undertake their own development. It uses a development strategy that mobilizes communities and maximizes the use of local resources, similar to that of AKRSP and the Orangi Pilot Project (OPP). Evaluations of the AKRSP and OPP show that the projects are financially sustainable and that they have yielded significant benefits for the poor.

Source: World Bank 2004b; Malik, Sohail J. 2003.

Given the AKRSP's success, other Rural Support Programs now operate across Pakistan, with a total cumulative rural investment (including the AKRSP) of Rs 15.0 billion. Much of this total (Rs 11.8 bn) derives from earlier investment by the AKRSP. Estimated total public and public-private partnership investments by the network in 2004-05 were about Rs 1.0 billion, (four percent of total public investments for rural development by federal and provincial governments, RSPs and PPAF⁸⁸). The largest of these, the National Rural Support Programme (NRSP), begun in 1992, was set up with federal government funding to work in all provinces and Azad Jammu and Kashmir. The NRSP is also the largest RSP in terms of funding, with cumulative projects of Rs 1.3 billion. NRSP activities are similar to those of the other RSPs and include programmes in human-resource development, rural credit and enterprise development, natural-resource management, physical infrastructure, and social-sector services. All the RSPs are linked through the Rural Support Programme Network (RSPN), funded by DfID, which provides a forum for the RSPs to share lessons of experience and to undertake strategic planning.

⁸⁸ The total includes Rs 957 million invested by the Pakistan Poverty Alleviation Fund in its physical infrastructure development program in 2004-05.

Another example of successful social mobilization and livelihoods development is the Andhra Pradesh Rural Poverty Reduction Project in India. Operating in a state with a rapidly growing economy and generally good infrastructure, the project focuses on creating women's self-help groups (SHGs). Group formation relies entirely on members' self-initiative and on their willingness to mobilize savings and inter-loan mechanisms conducive to establishing strong trust and discipline among the group members. While focusing on capacity building and social mobilization, the project also provides a financing facility for accessing productive assets, income generating activities and for starting micro-businesses. The investment facility is provided as a grant at the village level, which represents the first-tier federation of the SHGs, and is recycled by the community itself into a revolving fund extending loans to its own members according to agreed procedures and terms. Loans are revolved so that over a period of about five years all member households get access to a loan.

The SHGs and VOs also use their savings to leverage credit from commercial banks. As the SHGs movement continues to expand, the federative movement has been able to add two more tiers at the "block" and district level. The scale reached and the level of organization is such that the poor have over time become an extremely credit-worthy and attractive market for banks, micro-finance institutions, agro-business, traders and insurance companies. As a result, total credit and investments from the financial institutions and private sector have increased substantially. Households have also invested in education, health care, housing and further multiplied their assets as a result of additional income. Finally, because of their 'voice' and 'scale' they have become more effective in influencing the responsiveness and quality of service delivery by the public sector (Box 6.5).

Project Design and Sustainability

Components of social mobilization have been incorporated into various rural-development projects and programs, often in conjunction with micro-credit and public investment under the broad rubric of community-driven development (CDD). In principle, governments may be best suited for delivery of public goods and services (and the investments required to support these) and the private sector and NGOs best suited for delivery of private goods and services (including micro-credit, and skills training). However, the best institutional pathway to promote the active participation of communities and their linkages with both the public and private sectors is debatable, and depends on the particular characteristics of communities, government institutions and development constraints.

In areas where local government institutions remain unable to effectively deliver public services, direct interventions through community organizations and NGOs are needed. These programs work best where strong community groups exist; rural micro-level infrastructure and public health are especially important in isolated areas. To ensure long-term sustainability, however, it is important that these efforts do not undermine devolution initiatives intended to strengthen local-government institutions.

Box 6.5: Social Mobilization in Andhra Pradesh, India

Social mobilization through the creation of self-help groups (SHGs) has been a centerpiece of efforts by the government and NGOs in Andhra Pradesh, India. Following a successful pilot project covering 66,000 households begun in 1996, the Government of Andhra Pradesh incorporated the social-mobilization approach into its major poverty-reduction project, *Velugu*, which was subsequently renamed *Indira Kranti Patham* (IKP). The first phase, the Andhra Pradesh District Poverty Initiatives Project (APDPIP), was implemented between 2000 and 2006, covered 930,000 rural poor families in the state's six poorest districts. The second phase, the Andhra Pradesh Rural Poverty Reduction Project (APRPRP), is designed to cover two million rural poor families at a cost of 15 billion rupees (nearly \$300 million) over five years (2003-2008).

The projects were built on the existing women's self-help thrift movement that had begun 15 years earlier, and added capital, federation of institutions and technical support. Under the projects, groups of 12-15 poor and "poorest of the poor" women form an SHG; 150-200 SHGs make up a Village Organization (VO), 4,000-6,000 VOs federate to form a *Mahila Mandal Samakhya* (MMS) (Women's Group Confederation). This process is initiated by community resource persons (CRPs) or community coordinators, which are selected, remunerated, and evaluated by the community and based in the village for a period of at least three months. Typically, a CRP team consists of two women members, one Senior Bookkeeper and one Activist. This team meets with village officials, provides assistance in establishing group management and financial norms to existing SHGs, and helps form new SHGs. The larger VOs and MMS' are designed to have the critical mass to address social, economic and political issues that the smaller affinity groups cannot through the power of a combined voice and by pooling their supplies and demands of marketed goods and services.

In addition to group mobilization, the programs focus on expanding the assets of the poor and creating economic opportunities connected to household livelihoods. To reduce, mitigate and manage risk IKP also supports the Community Investment Fund, which promotes investments in sub-projects for the poor, as well as the Comprehensive Insurance Package, which seeks to develop community-based delivery of life and health insurance services.

Source: Reducing Poverty on a Global Scale (World Bank 2005c). "Case study on Andhra Pradesh"; Project documents.

Financing rural development for poor households and local groups at the local level: credit versus grants. International best practice suggests that, generally, loans should be the principal financing instrument for 'private goods.' For the poorest households, for which there is almost no institutional credit available however, grants or matching grants may be a more appropriate tool to facilitate access to productive assets. Yet providing matching grants through NGOs or government agents involves inherent risks related to supply-driven bias. Thus, the establishment of revolving funds at the community level for administering internal lending mechanisms has proven to be more reliable and effective.

Ideally, it is preferable to avoid mixing credit and grant financing in the same vehicle. Rather, separate programs should be developed. A program for livelihoods development of poor communities should include social mobilization, matching grants (or revolving funds) for asset creation and the development of market linkages. A separate effort to develop micro-finance

services should be run as a business with appropriate linkages to financial-sector requirements and private sector-oriented client-selection methods.

Incorporating Social Mobilization in Development Projects

A social mobilization approach involving greater community involvement can enhance the effectiveness of development efforts across a wide range of rural sub-sectors, including forest management, watershed development, irrigation or agriculture. By building institutions of natural resource users, communities are better placed to pursue collective action and exercise management authority over the sustainable use of the resources.

In forestry, international experience suggests that a purely conservationist approach to forest management is infeasible given that this ignores the livelihoods needs of poor forest-dependent people. Rather, devolution of responsibilities to local communities for the sustainable use of natural resources must be a priority, as this will promote gains in productivity and increase communities' income, without compromising forest sustainability. As with all natural 'common pool' resources (CPR), multiple benefit streams flow to multiple stakeholders, and multiple service deliverers and decision makers are engaged in overseeing access to and management of these benefits.

Projects in watershed development can also serve as a point of entry for the mobilization of poor communities and establishment of an institutional base for planning and implementing multi-sector activities to improve livelihoods. Watershed development projects typically have the multiple objectives of improving agricultural activity levels, sustaining and improving management of the natural-resource base, and increasing income levels among beneficiaries within the watershed areas. In addition to introduction of watershed protection and treatment technologies, projects also support community-based institutional development for collective decision-making and management. This is intended to promote participation of the local population in the sustainable management of watershed areas (common productive assets) and in activities that promote savings and income (individual productive assets). As with forests, management of watershed areas involves critical externalities; gains to one individual may entail costs to another (upstream/downstream trade-offs). For this reason, watershed management should not rest entirely in the hands of one set of stakeholders. Instead, incentives and institutional frameworks that promote cooperation and participation of watershed community groups, line agencies and local governments must be supported.

Community participation through Water Users Associations (WUA) can improve maintenance and efficiency of surface irrigation. Confronted with the failure of traditional top-down irrigation bureaucracies in delivering services and ensuring proper function of the systems, WUAs can provide farmers with greater control over operation and maintenance of the watercourse system in their locality. WUAs can also serve as a mechanism for confronting governance and transparency issues in the delivery of water, thereby creating an environment of greater accountability in terms of public service delivery. WUA formation and capacity building are typically addressed through irrigation projects rather than livelihoods projects although the same principles apply. In addition, studying organized water users as the core element of irrigation projects, is instructive in articulating critical linkages with agriculture services and markets, which have typically been a weakness of irrigation projects.

Farmers' organizations (FOs) can also serve as a mechanism for achieving the required scale and scope needed to increase farmers' influence of and access to markets, traders and public services. These associations are typically organized along commodity lines and are typically driven by market opportunities rather than management of a public asset. As these associations gain confidence and capacity, they are likely to evolve into more sophisticated organizations such as cooperatives and be in a much better position to intermeditate with markets forces and provide services to their members. The demise of the cooperative movement in many countries around the world is mostly the result of excessive government influence in the decision making process of these institutions as well as the lack of a clearly established mutual approach driven by genuine ground up principles based on member needs and social cohesion. Where successful, for instance in Western Europe, the cooperative structure has evolved outside direct government intervention and was also able to cater to farmers' financial needs through a savings and loan approach.

MICROFINANCE INTERVENTIONS

In Pakistan, microfinance has been slow to scale up, and outreach to women has been limited. It is estimated that only about 8 percent of poor households receive credit from formal sources. Microfinance lending is concentrated. The top five microfinance programs, one bank and four NGOs, had between them 84 percent of the total market. In the past, much microfinance has been delivered through integrated development projects with credit components. There have been historically interest rate caps and subsidies but this has changed in recent years. However, most microfinance institutions still receive below market cost funds in various forms. The PPAF currently funds 29 NGOs providing microfinance but half have fewer than a thousand clients. Savings services are encouraged by RSPs but they are not permitted to take deposits directly so these are held and invested by community organizations and deposited with banks.

Following recent legislation, Pakistan's microfinance policy environment now appears to be quite conducive to efficient delivery of microfinance to poor households. The challenge now is for the various actors to seek out efficiency and scale. Moreover, there continues to be significant subsidies in various forms in Pakistan microfinance, which warrants examination for efficiency. The subsidies have largely been related to low interest rates on loans, but microfinance projects generally have failed to lead to longer term institutional development.

Experience with microfinance in Indonesia, Egypt, India, Vietnam and Pakistan (the Kashf Foundation project) suggests the existence of a few enabling public actions that can enhance program effectiveness (Table 6.2).

The Pursuit of Efficiency and Public Policy Options. The overarching aim of most microfinance institutions and country systems is the pursuit of efficiency in the delivery of rural financial services (above and beyond credit) to poor households in a sustainable manner. The quite broad country experience and the wider literature suggest the following priority public policy areas that may be of relevance to Pakistan: (i) supporting institutional innovation through policy research aimed at better understanding the efficiency of comparative microfinance experiences; (ii) supporting capacity building in institutions and communities; (iii) supporting the provision and sharing of information; (iv) avoiding subsidized lending whenever possible but analyzing the comparative poverty impact of current subsidies; (v) supporting savings; (vi) avoiding add-on credit components; (vii) meeting the product needs of the poor; and (viii) improving communications (Nelson 2006).

Supporting Institutional Innovation. Although there are no global best practice cases, arguably the most important area of public policy support for microfinance in Pakistan is in the area of knowledge. While individual microfinance experiences globally are well documented, there are still no country studies that compare the cost effectiveness and impact of alternative approaches to service delivery of rural finance. Available evidence from multi-country studies suggest some several contributing factors for the profitability of microfinance organizations. Government could strengthen microfinance development by supporting research on comparative efficiency and impact across the available range of alternative approaches, perhaps through some competitive grant funding associated with the Microfinance Network, an international associating of leading microfinance institutions. It is critical to not overlook the impact and cost effectiveness of the many informal savings and credit networks and relationships. These provide competition to formal microfinance institutions and offer more-tailored products at quite competitive costs.

Supporting Capacity Building. The use of public funds could justifiably be spent to improve national microfinance skills at both institutional and community level.

Support for Information. The cost of information about individuals or groups in scattered rural communities is high. This is one of the main reasons for the high cost of rural lending. This can be reduced by a widely adopted group approach that passes on a share of these costs and responsibilities to the group itself. While the government's role keeping records on groups has privacy risks, in India, at least one project supporting groups now provides lending institutions with ratings on group performance, which greatly aids lending decisions. This is a local variation of the publicly available credit ratings often available to microfinance institutions.

Risks of Subsidized Lending and the Analysis of Subsidy Impact. The existing case studies and global experience do not support an argument for broad subsidized lending, although they also do not provide strong enough evidence against utilization of a judicious initial subsidy to enable microfinance institutions to reach a sufficient scale for profitability. The history of global rural finance is dotted with failures due to large-scale subsidized lending, among these examples is the pre-reform period of Indonesia's now profitable Bank Rakyat Indonesia (BRI). However, the Vietnam Bank for Agriculture and Rural Development (VBARD) and its new offshoot the Vietnam Bank for Social Policies (VBSP), have, in fact, reached large numbers of poor people through directed subsidized lending. Still, this is likely a unique case in an unusual country with a strong pre-existing network of communes. Moreover, it is too early to predict what the outcome of the VBSP initiative will be. Nevertheless, the global experience suggests that with any new microfinance operation, there will likely be a need for initial subsidy in the early years. The evidence shows few if any such cases that have truly reached the poor on a large scale and been profitable from the outset.

In Pakistan there is still a substantial array of below-market rate funds going towards microfinance through both direct and indirect routes. The cost and impact warrant close study. Much appears to have gone to keeping interest rates down instead of building sustainable institutions. However, there has been little if any analysis of just what the cost and impact has been. It is important to know for the future what course of action would ensure the best impact and what pattern of support would offer the fewest distortions of the market.

Encouraging Savings. There may be some role for governments in encouraging savings services, including post office savings. Literature and some country case studies suggest that savings may be more important for the very poor for consumption smoothing and small

investment than credit, as well as offering lower risk⁸⁹. Savings services have often been limited partly due to regulations that control operation of institutions offering savings accounts. Managing very small individual savings accounts is costly, as the new Pakistan First Microfinance Bank is discovering. But demand may grow rapidly. In Indonesia, BRI's savers (averaging about \$100) are about 10 times the number of active borrowers (averaging about \$500) (Table 6.2).

Avoiding the Error of the Add-on Credit Component. The evidence shows that microfinance needs a financially sound and sustainable institutional home to enable effective management. It should not simply be added as a component to a CDD project. There are many examples of failed add-on, often subsidized, credit components. For example, the World Bank's Independent Evaluation Group (IEG) concluded recently that in the Indonesia Kecamatan Development Program (KDP) committed an error offering credit in addition to its grant program outside the framework of a sound microfinance institution. The poor repayment performance of that component could have been anticipated. For increased poverty impact, the same funds could have been used for a larger volume of targeted infrastructure. Add-on credit components have been a feature of some Pakistan CDDs. There are some partial successes such as AKRSP's credit component but this did not reach profitability despite the institution having substantial skills.

Meeting the Product Needs of the Poor. Country experience suggests that both lending- and saving-product flexibility and diversity are critical for the poor. While this is predominantly a private-sector role, governments may be able to help by creating an enabling environment for innovation and supporting research, again perhaps through some research-grant arrangements. Market research is important. The poor often need to transact loans over very short time frames. In Vietnam, for example, one NGO has a daily, weekly, and monthly loan product. VBSP is unable to compete with this. Institutions that have done well, such as Grameen Bank in Bangladesh, SEWA and others, offer products geared closely to demand. They are agile institutions. Diversity of institutions may help; however there is some trade-off between the number of institutions and efficiency as, with a given demand, volume, which aids efficiency, is reduced by a multitude of small institutions. Ultimately, in Pakistan, the efficient can be expected to thrive as the less efficient will be forced to close.

Improving Communications. New lending technologies linked to products are being vigorously pursued in case countries. There is increasing use of ATM-card technology (one example is India's Kisan (farmer) bank cards, which enable flexible borrowing). Computerized systems are lowering costs and enabling greater focus on efficiency. But Pakistan lags the other case countries in terms of communications and technology. This would be a key area for public investment in support of microfinance.

Policies and Practices of Microfinance Institutions. Global experience suggests that, other things being equal, poverty and sustainable scale probably have a better chance of success if an institution: (i) lends to women initially; (ii) starts off in more densely populated urban areas to keep initial costs down; (iii) charges full costs; (iv) builds to scale rapidly; (v) uses groups and supports internal group lending; (vi) listens and develops highly tailored saving and loan products for the poor; (vii) benefits (in some cases) from some cross-subsidy flowing from higher profit clients to lower profit clients; (viii) gives priority to capacity building for both itself and clients;

⁸⁹ However, this calls for some qualification. It has been suggested that demand for savings in Pakistan may be somewhat less than it is in some other countries due to a preference in Pakistan rural areas to keep livestock or fixed assets. But, even if true, this is likely to change.

(ix) is generally fairly unyielding about repayment, but (in some cases) attempts to offer insurance cover; (x) has tight management with an administration pyramid very narrow at the waist with strong focus on keeping down local/branch level costs including use of simple procedures and records; (xi) adopts new technologies when and where available; (xii) piggy-backs on already available client knowledge; (xiii) initially spreads costs across other program activities beyond credit; (xiv) benefits from some start-up subsidy but spends that wisely to enhance future efficiency and reach; and (xv) is flexible and agile. The institution also must operate within a reasonably conducive enabling environment, which it may or may not be able to influence.

SOCIAL PROTECTION

Social protection programs to supplement or stabilize incomes of the poorest households remain very limited in Pakistan, particularly in rural areas. Social security payments, made almost exclusively to former government and formal sector workers in urban areas, account for about two-thirds of the estimated Rs 52 billion in expenditures on social protection (Table 6.3). The wheat subsidy, which costs Rs 8 billion or about 15 percent of total expenditures on social protection, is untargeted and is likely to provide little benefit to poor rural households, except to the extent that net wheat sales from public sector imports and drawdown of government stocks reduce market prices.

Safety net programs targeted to the poor account for less than 18 percent of total social protection expenditures. The largest targeted program, *Zakat*, is financed through a voluntary levy of 2.5 percent of the value of financial assets deducted once a year and covers 1.7 million beneficiaries at a cost of Rs 5.9 billion. The *Pakistan Bait-ul-Mal* is a Federal government agency delivering vertical social welfare programs financed from general revenues, including the Food Support Program, which in 2003/04 delivered Rs 2.5 billion cash transfers to 1.25 million beneficiaries. Including the Tawana Pakistan program that provides midday meals to 530, 000 girls in government rural primary schools at a cost of Rs 0.70 billion annually, these safety nets total less than Rs 10 billion, or 0.17 percent of GDP.

Zakat, the largest targeted safety net program, has only a limited impact on poverty and inequality. A major problem with *Zakat* is its targeting, which features significant leakage to the non-poor, especially in rural areas (Table 6.3). Moreover, benefits are small and delivered infrequently. For example, *Zakat's guzara* transfers and rehabilitation grants (its main components) represents 14 and 23 percent of average recipient household income, respectively. These figures are higher among ultra poor households (25 and 42 percent respectively) and lower among poor and non-poor households (around 6 to 8 percent for each program modality). By comparison conditional cash transfer programs in Mexico and Nicaragua provide approximately 21 percent of average household expenditures. Given the relatively small size of *Zakat's* program benefits, it is not surprising that poverty and inequality decline only slightly as a consequence of these transfers. Moreover, irregularities in benefit payments also limit *Zakat's* impact on poverty. It is common for beneficiary households to receive fewer than the stipulated number of transfers; survey results indicate that the total amount received by the average household from *guzara* was equal to only about half of the full entitlement of Rs. 6,000 per year. *Bait-ul-Mal*, by contrast, delivers better targeted (albeit even smaller) benefits.

Table 6.2: Characteristics of and Lessons Learned from Microfinance (MF) Programs

<i>Country/program</i>	<i>Indonesia BRI</i>	<i>Egypt NBD</i>	<i>India Spandana</i>	<i>Vietnam VBSP</i>	<i>Pakistan Kashf</i>
Type of Program	Unsubsidized credit; loans up to \$5,000; savings accounts	Unsubsidized credit to poor (but not the poorest) households	Unsubsidized credit; women only; initially only urban	Subsidized publicly owned bank with social objectives	Credit and savings for poor women; small loans; training and insurance
Beneficiaries	3 million borrowers (about 20% agriculture); 25 million savers	25,000 borrowers (most non agriculture)	120,000 borrowers in 2004	8.5 million borrowers	65,000 borrowers
Institutional Factors	Large, mainly publicly owned bank with many branches; Strong focus on costs; offers some separate subsidized programs	Profitable micro-finance department in larger bank; small portfolio.	Low costs; retails funds from wholesale banks such as ICICI.	Established to ring-fence subsidized credit for social reasons; very large volumes.	NGO with low unit costs; focus is on enterprise development; Profitable (but not yet on an adjusted basis)
Sustainability	Sustainable, with high profits (perhaps mainly from larger loans); about 6% return on assets; dominance and policies means limited competition	Sustainable; microfinance is most profitable part of business; challenge is to maintain sustainability at a greater scale	Profitable and sustainable; 8.3% return on assets; scaling up of SHGs may entail high facilitation costs	Sustainability is uncertain as it operates with subsidies	Slightly profitable and thus probably sustainable; relatively safe portfolio
Lessons and Observations	<ul style="list-style-type: none"> * Safeguarding autonomy is key to turning around a failing public bank * Self-reliant fund mobilization helps * Ring-fence subsidies if they are politically unavoidable * Focus on savings and branch efficiency 	<ul style="list-style-type: none"> * Being selective helps profitability yet hinders reach and poverty impact * An efficient organization can make MF profitable 	<ul style="list-style-type: none"> * Start with lower cost loans in urban areas and focusing on women * Focus on loans with high value per staff cost * Pursue group savings first before lending * Reduce interest for proven borrowers * Offer insurance 	<ul style="list-style-type: none"> * Public credit <i>can</i> reach scale and depth. 	<ul style="list-style-type: none"> * Lending to women and starting in urban areas can enable a quick and profitable start-up * Scale up fast to achieve volume and profitability, but avoid excessive risk

Source: Adapted from Nelson 2006.

Table 6.3: Distribution of households in the major safety net programs in Pakistan, 2004-05

	Ultra-poor		Poor		Non-poor		Total
	% of beneficiary households ¹	% of program funds	% of beneficiary households ¹	% of program funds	% of beneficiary households ¹	% of program funds	
<i>Zakat guzara</i>	39	33	33	35	27	32	100
<i>Zakat Rehabilitation</i>	44	23	19	32	37	45	100
<i>Bait-ul-Mal</i>	46	45	30	32	23	23	100
All sample households	38		35		27		100

Source: Staff estimates based on Phase II of Pakistan Safety Net Survey.

Notes: Before forming the income groups, expenditures have been adjusted to counterfactual pre-program levels by subtracting half of the average monthly program receipt over the last 12 months from the total expenditure.

Safety nets for both the rural and urban poor should be made more efficient and scaled up so as to cover a major share of the chronic poor and some of the transitory poor as well (largely through the expanded use of conditional cash transfers). The wheat subsidy program could be replaced by a targeted program based on either food or cash. Cash transfer programs such as the Food Support Program could be scaled up and the scope of these programs expanded to encourage long-term human capital investments among the poor, for example based on the model of the pilot Child Support Program, a conditional cash transfer (Box 6.6). Likewise the Tawana Pakistan school feeding program could be redesigned and scaled up. Nutritional interventions aimed at improving health and nutrition of women and infants ought to be piloted and scaled up. The government may also consider piloting a major rural workfare program in order to provide temporary employment to vulnerable households.

Box 6.6: The Child Support Program (CSP) — A Conditional Cash Transfer

Pakistan will soon begin to implement a new Child Support Program (CSP). CSP is a conditional cash transfer for education targeted to existing beneficiaries of the Food Support Program (FSP). CSP will provide an additional benefit to FSP beneficiaries provided their children of school-going age regularly attend school.

Under CSP, a family with one child aged 5-12 years will receive an additional Rs. 200 per month, while a family with two or more children aged 5-12 years will receive an additional Rs. 350 for as long as they keep all their children 5-12 enrolled in school and attending at least 85 percent of the time. Families with no children of school-going age or whose children do not attend school will continue to receive the regular FSP benefits and will therefore not lose out as a result of this new program.

CSP was launched as a pilot in three districts in late 2006. A rigorous scientific impact evaluation, based on comparisons of outcomes with a control group of FSP beneficiaries not receiving the CSP transfers, is planned and scheduled to be completed by October 2007. Depending on the outcome of this evaluation, the FSP pilot could later be scaled up to cover the entire country.

Table 6.4: Safety Nets in Pakistan

Name of program	Type of benefit	Target group	Source of funds	Annual Expenditures (Rs bn)	Number of Beneficiaries
Zakat (cash transfers and other)	Cash	The destitute	Special levy on bank balances	5.86	1,733,000 ^a
Bait-ul-Mal (Food Support and other)	Cash (and some schools)	The destitute	Federal budget	4.5	1,250,000 ^a
Tawana Pakistan	Midday meals	Girls in government rural primary schools	Federal budget	0.7	530,000 ^a
Wheat subsidy		All wheat consumers (untargeted)	Federal and provincial budgets	8	n.a.
<i>Total, social assistance</i>				19.06	n.a.
<i>Social security</i>					
Employees Old Age Benefits (EOBI)	Old-age pension (cash)	Formal-sector workers	Employers	1.74	850,000 ^b
Workers Welfare Fund (WWF)	Housing, schools, health facilities	Formal-sector workers earning less than Rs 5,000 per month	Employers	2.6	n.a.
Employees' Social Security Institutions (ESSI)	Insurance against death, disability, maternity (cash); medical care in own hospitals (in-kind benefits)	Formal-sector workers earning less than Rs 5,000 per month	Employers	2.08	464,000 ^b
<i>Total, social security</i>				6.42	n.a.
Total, social assistance and social security				25.48	n.a.
Total, as share of GNI				0.47%	n.a.

Source: World Bank Pakistan Safety Nets report (forthcoming).

Notes: ^a Number of beneficiaries of recurrent benefits; ^b Number of workers covered by insurance scheme.

Heavily-indebted Laborers

Social protection programs are also needed to address the problems of heavily-indebted laborers subject to forced labor of various types. This practice is particularly persistent among landless sharecroppers in rural southern Punjab and northern Sindh. Measures to assist households trapped in unfair labor and credit arrangements would have a major impact on some of the poorest rural households in Pakistan. One option, implemented by the government of Nepal in 2000, was to issue a decree freeing such laborers from ancestral debts and imposing harsh penalties on employers. An alternative to manumission by decree would be some sort of debt buyout implemented through local governments or NGOs. Whatever means is used to eliminate or ease the debt burden of these laborers, these efforts should be complemented by other assistance such as skills development, access to credit, and perhaps even land grants, in order to enable laborers to develop alternative sources of income not linked to erstwhile employers-cum-creditors. Given the political sensitivities involved and the need to test the modalities for reduction/elimination of debts and income-generation programs, pilot projects may be needed before full scale reform is attempted.

Box 6.7: Problems of Heavily-Indebted Laborers in Pakistan

Laborers subject to unfair labor and credit arrangements work in various sectors and industries in Pakistan, e.g. agriculture, carpet weaving, brick-kilns, stone quarrying, hotels and restaurants and construction. Debt bondage is the worst form of these unfair practices, in which workers are bound to employers by debts owed to the latter as well as through formal or informal labor contracts. Because of their lack of assets, extremely low incomes and lack of funds, poor laborers may become dependent on the landlord or employer for credit with high implicit interest rates that must be repaid in the form of free labor to their creditor. This type of labor bondage often continues over generations as when adults grow old or are disabled, their children become liable for the debt. Similarly, when husbands die, wives must assist in the repayment of these debts. In its worst form, laborers are not allowed to work at other places without the permission of the landlord/employer. In some cases, women and children must remain resident on the farm to vouchsafe good behavior.

Religion, ethnicity and caste play major roles in determining the burden of these labor practices. According to a report carried out by Australian consultants for the Government of Sindh and the Asian Development Bank under the *Sindh Rural Development Project*, “There are some 1.7 million landless agricultural workers (*haris*) and sharecroppers in five districts of Sindh Province (Thatta, Dadu, Badin, Mirpurkhas and Umerkot). Most of these people are in debt bondage. While bonded labor exists throughout Sindh, the majority of those bonded in northern Sindh belong to the Muslim majority, while most of the bonded agricultural laborers in southern Sindh belong to *dalit* (untouchable) and to tribal communities who have migrated from the drought-prone area of Tharparkar desert. Poverty and starvation have forced these communities to accept cash advances from landlords, and to submit to work for them from dawn until dusk. Bonded laborers may be detained or guarded to stop them escaping and in these situations of total ownership rape of women is not uncommon” (Agrodev 2000).

Though the number of workers subject to these extremes may be only a small share of *haris* and sharecroppers, the plight of these people led the Pakistan government to pass the *Bonded Labor System (Abolition) Act* of 1992. Despite the serious penalties prescribed by the legislation, however, cases of bonded labor persist because of the political and financial strength of some landlords in southern Punjab and Sindh.

Sources: Nazli 2003 and Agrodev 2000.

7. SUMMARY AND CONCLUSIONS

After a decade of moderate growth but little or no long term change in rural poverty in Pakistan, agricultural output, rural incomes, rural poverty and social welfare indicators all showed marked improvements between 2001-02 and 2004-05. However, longer term trends suggest there is little reason for complacency. Some of the improvement in rural expenditures between 2001-02 and 2004-05 appear to reflect low levels of income related to drought and low levels of workers' remittances in 2001-02. The agricultural GDP per capita growth rate (1999-2000 to 2004-05) was only 0.3 percent per year; rural poverty rates in 2004-05 are still at levels that approximate those of the 1990s; and social welfare indicators in Pakistan remain significantly below those of other countries in south Asia. Moreover, problems related to timing and availability of water for irrigation, inadequate rural infrastructure, a skewed distribution of assets, and low levels of health and education continue to slow the progress of economic growth and poverty reduction.

RURAL POVERTY: STRUCTURE AND TRENDS

About two-thirds of Pakistan's population lives in rural areas (1998 census data), where average per capita expenditures are 31 percent lower than those in urban areas (Rs 1259/month and Rs 1818/month in 2004-05, respectively). Rural, as well as total population growth rates are declining, which bodes well for future per capita income growth. Nonetheless, the rural population is likely to continue to grow, and may reach 122 million in 2015 (64 percent of the population) at historic rates of migration of 1.2 percent per year. Urban population would reach 70 million in the same time frame according to this scenario, and 82 million (43 percent of the population) if the net migration rate doubled to 2.4 percent per year.

The majority of the rural poor in Pakistan are not farmers (neither tenants nor owners). Farmers comprised only 35 percent of the households in the bottom 40 percent of rural per capita expenditure distribution. Non-farm households (not including agricultural laborer households) accounted for slightly over half (57 percent) of the poor in 2004-05. This distribution of rural poverty in large measure reflects the distribution of land, which is highly skewed in Pakistan. According to the 2000 Agricultural Census, only 37 percent of rural households owned land, and 61 percent of these land-owning households owned fewer than 5 acres, (15 percent of total land).⁹⁰

Because of the skewed distribution of land and agricultural income, as well as non-agricultural income's large share of total income for the rural poor, agricultural growth is not highly correlated with reductions in rural poverty. During the 1970s and 1980s, agricultural growth was accompanied by substantial reductions in rural poverty, but rural poverty rates in Pakistan did not decline in the 1990s in spite of substantial growth in agricultural GDP. In

⁹⁰ Pakistan has attempted to implement several land reforms (the most recent in the early 1970s) that faced substantial opposition and ultimately had only limited success. Sale or grants of government land to the poor are potential alternatives. Market-based land reform involving voluntary land sales is another alternative, but could involve large fiscal costs (See World Bank 2004b).

addition to skewed land distribution, possible overestimates of agricultural GDP growth and an increase in real consumer prices of major staples in the mid-1990s also contributed to stubbornly high rural poverty rates.

Data from national household surveys indicate that real expenditures of the poorest 40 percent of households increased and rural poverty decreased between 2001-02 and 2004-05.

However, comparing 2004-05 per capita expenditures with those in 1998-99, there was almost no change (only -0.2 percent) in real expenditures per capita of the poorest 40 percent of households. A decline in crop incomes due to drought in 2001-02 and then an increase in 2004-05 (in large part because of a record cotton crop following good weather) are in part responsible for the fall and subsequent rise in rural household incomes, particularly for cotton farmers. In addition, workers' remittances (some of which accrue directly to rural households), increased sharply from \$2.4 billion to \$4.2 billion over the three years, although as these have changed little between 2002-03 and 2004-05, further large increases seem unlikely. Finally, rural households also benefited from overall growth in the economy that spurred demand for construction and other labor-intensive services.

Analysis of rural household panel data indicates that primary and secondary education, land ownership, village electrification and paved roads are all significant factors that determine changes in household welfare over time. For example, the presence of an additional male with a secondary education in a household increases real expenditures (a measure of long-term incomes) by 10.2 percent, a magnitude approximately equivalent to owning five acres of land (a small farm by Pakistan standards). Econometric evidence also suggests substantial positive returns of education on income levels in rural Pakistan persist, even after taking into account innate cognitive ability, mainly due to higher productivity in non-farm activities.

Social welfare indicators also showed improvement in 2004-05, but unlike income and expenditure-based measures, these gains appear to reflect permanent (structural), rather than transitory factors. Urban residents fare much better than do rural residents, particularly with respect to access to tap water, adult literacy rates, and gross enrollment rates in primary school. All of these measures show consistent improvement for rural households in surveys from 1998-99, 2001-02 and 2004-05, though there remain large differences between males and females in terms of education and literacy. For example, gross enrollment rates for girls at primary school rose by 18 percentage points, from 50 percent in 1998-99 to 68 percent in 2004-05, but they remain 21 percentage points below those for boys (89 percent). Moreover, these gender gaps are declining only slowly: the gender gaps in gross enrollment rates at both the primary and middle school levels declined by only five percent between 1998-99 and 2004-05.

TOWARDS A STRATEGY FOR RURAL GROWTH AND POVERTY REDUCTION

Overcoming the constraints to rural income growth and poverty reduction in Pakistan will require a strategy that goes beyond agriculture, however, and for several reasons. First, the rural economy involves much more than just agriculture and much of the gains made in agricultural production accrue to the non-poor. Agriculture accounts for only about 40 percent of rural household incomes (30 percent for the poorest 40 percent of rural households) and the majority of the rural poor in Pakistan are not farmers. Secondly, household welfare involves more than just income and Pakistan's rural poor are particularly disadvantaged in non-income measures of welfare. Third, poverty reduction is ultimately about people, not location or economic sectors. As in most of Asia, Pakistan's economy is in the midst of a major transformation characterized by growing urbanization and increased linkages among the rural, urban and international markets.

Given this context, a comprehensive rural growth and poverty reduction strategy is needed, predicated on four main pillars:

- Promoting efficient and sustainable **agricultural growth** to raise incomes of small farmers and to generate growth linkages in the rural non-farm economy.
- Creating an enabling environment for the **rural non-farm sector** to enhance employment and incomes, and improving **rural public-service delivery** in infrastructure, health, education and population to serve as a foundation for growth and to increase household welfare
- Improving the **effectiveness and governance of rural institutions** through the decentralization and strengthening of local demand for enhanced accountability as well as through more proactive use of public-private partnerships
- **Empowering the poor** and protecting the most vulnerable through social mobilization, safety nets and facilitating access to productive assets for income generating activities.

PROMOTING EFFICIENT AGRICULTURAL GROWTH

Annual agricultural growth in Pakistan averaged 3.7 percent over the four decades from 1959-60 to 2001-2002, due in large part to high growth in the crops sub sector in the 1970s and 1980s as a result of Green-Revolution technology (improved seeds, increased fertilizer use, and irrigation). However, the performance of the agriculture sector (particularly the crops sub-sector), has suffered in recent years because of severe droughts, as well as environmental factors (increased soil salinity and deteriorating groundwater quality). From 1999-2000 to 2004-05, agricultural GDP grew at a modest 2.3 percent per year (only 0.3 percent per year on a per capita basis), in spite of a 7.5 percent growth from 2003-04 to 2004-05 due partly to a record cotton harvest. Total crop GDP grew by only 1.8 percent per year, mainly because of a 1.4 percent annual increase in crop GDP/hectare, while the total cropped area increased by only 0.4 percent per year. Livestock, which accounts for nearly half of agricultural GDP, grew by 3.0 percent per year.

Four crops (wheat, cotton, basmati and ordinary rice, and sugar cane) accounted for roughly two-thirds (68 percent in 2002) of agricultural crop GDP and slightly more than one-third (34 percent) of total agricultural GDP in 2004-05. Much of the focus of agricultural policy, research and extension has been on these crops, and adoption of Green-Revolution technology of improved seeds, increased fertilizer use and irrigation (especially private tube wells, which provide better water control) contributed to substantial increases in yield and production of wheat and rice. Comparatively little attention has been given to increasing livestock productivity, despite the sub sector's high share of total agricultural GDP.

Although grain yields have continued to increase since the onset of the Green Revolution, further productivity increases are possible. From 1990-91 to 2004-05, average growth in wheat, basmati rice and maize yields were 2.1, 3.73, and 3.95 percent, respectively. Cotton yields, by contrast, stagnated over this period, increasing by only 0.59 percent per year (although 2004-05 produced a bumper crop), and yields of sugar cane increased by only 0.91 percent per year. Past investments in agricultural crop technology (especially for cereals) have had very high payoffs in south Asia in terms of poverty reduction, both by raising farmers' incomes and by reducing real prices of major staples (wheat and rice). Further investments in agricultural technology, especially for the major cereals and cotton, (for which Pakistan has a comparative

advantage are needed to offset declining soil fertility in many regions as well as to increase productivity.

Table 7.1. Summary of Suggested Policy Reforms for Accelerated Rural Growth and Poverty Reduction

Agriculture

- Increase agricultural productivity
 - Maintain incentives for production of tradable agriculture
 - Avoid policy-induced appreciation of real exchange rates by liberalizing markets for foreign exchange and trade
 - Promote agricultural diversification through public-private partnerships in research and extension (Box 3.1) and marketing of high-value crops
 - Promote livestock development, particularly for smallholders
 - Increase research expenditures; promote competition in dairy marketing and in the supply of veterinary services (Box 3.3)

- Improve efficiency and sustainability of water use (Box 3.5)
 - Develop plans for **asset management** that include:
 - Measures for the divestiture by irrigation departments of some assets to the private sector or farmer organizations (FOs), whenever feasible
 - Detailed operation and maintenance plans, including cost-recovery mechanisms
 - Improve **service delivery** and **allocation of water** through strengthening of water users associations and FOs, and by giving FOs responsibility for collection of *abiana* and operation and maintenance at the distributary and branch canal level
 - Increase the **availability of water** through investment in storage and other structures after careful evaluation of environmental and social consequences
 - **Rationalize water use** and review water charges so that these better reflect opportunity costs of water usage
 - Begin to develop markets for entitlements to canal water by establishing legal tradable water rights at the national and provincial levels

- Improve efficiency of agricultural markets
 - Reduce government interventions and subsidies in wheat markets (Box 3.6)
 - Significantly lower volumes of public procurement by provincial food departments and PASSCO
 - Avoid domestic marketing and storage restrictions
 - Maintain a liberalized import policy
 - Increase transparency and consistency of government policies
 - Promote farmer associations to increase farmers' market power
 - Establish system to meet SPS standards (Box 3.2)

Table 7.1: Summary of Suggested Policy Reforms for Accelerated Rural Growth and Poverty Reduction (cont.)

Rural Non-Farm

- Provide adequate rural infrastructure
 - Improve the quality of electricity supply and access to telecommunications services
 - Ensure adequate funding for maintenance and improvement of rural roads
 - Extend basic motorized access in rural areas where this is lacking

- Facilitate market linkages
 - Strengthen local business associations and facilitate group marketing and business clusters to link small-scale entrepreneurs to larger firms and markets
 - Enhance mechanisms for contract enforcement by promoting transparency in the legal system

- Increase access to credit
 - Continue liberalization of the banking sector and credit markets
 - Avoid use of subsidized credit through public banks
 - Promote use of alternative forms of collateral and more flexible loan repayment
 - Improve land titling through computerization and administrative reforms
 - Provide training programs in bookkeeping and business management

Public Service Delivery

- Increase flow of resources to local government for rural development
 - Monitor budgets and actual flows of revenue and expenditures for rural development, including flows to local government
 - Use block grant funding for equalization purposes and performance grants to reward good performance
 - Increase rural development expenditures (especially for health and education)

 - Improve administrative efficiency
 - Fill key administrative positions (especially finance and planning) with skilled staff
 - Provide training for local government officials (especially at the TMA level)
 - Clarify rules and procedures regarding funding for CCB projects (Box 5.2)

 - Enhance sustainability of RSPs
 - Improve coordination and begin integration of RSPs with local government
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Table 7.1: Summary of Suggested Policy Reforms for Accelerated Rural Growth and Poverty Reduction (cont.)

Improving the Effectiveness and Governance of Rural Institutions

- Improve Governance and Accountability
 - Reduce the share of resources allocated to discretionary special programs
 - Publish and disseminate local, provincial and federal government plans and financial reports
 - Strengthen Monitoring Committees at local levels to assess performance and take actions
 - Enhance mechanisms for contract enforcement and promote transparency in the legal system
 - Strengthen monitoring and evaluation of rural development programs and trends
 - Establish up-front indicators, carry out baseline assessments and monitor performance of indicators against targets
 - Improve basic data collection (e.g. rural wage data)
 - Promote Public-Private Partnerships
 - Forge partnerships with the private sector to develop and disseminate new agricultural technologies
 - Strengthen engagement with private and NGO schools
 - Increase financial support to NGOs, including RSPs, for delivery of micro-credit, skills training and other private services
 - Increase accountability, efficiency, transparency and competition in surface water supply
 - Unbundle operations into bulk (operation of dams and barrages), transmission (canal management) and distribution (management of tertiary systems), with relations among the parts governed by contracts
 - Encourage private-sector involvement in management of canals and promote competition between irrigation departments and private service providers at the distributary level
 - Improve effectiveness of agricultural research (provincial level) and extension (provincial and local-government levels)
 - Create autonomous research organizations (provincial level)
 - Tailor research agendas to the needs of individual provinces
 - Increase the capacity of district governments to set priorities and develop implementation strategies for agricultural development
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Table 7.1: Summary of Suggested Policy Reforms for Accelerated Rural Growth and Poverty Reduction (cont.)

Empowering the Poor

- Promote social mobilization
 - Initiate a social-mobilization program based on building social capital and promoting organizations and institutions of the poor
 - Facilitate access to productive assets by poor people through a matching grant window or the establishment of revolving funds at the community level
 - Strengthen Citizen Community Boards (Box 5.2)
 - Review and revise rules, procedures and partnership arrangements between government and CCBs
 - Establish a robust monitoring and evaluation system
 - Develop project standards and written agreements that clearly delineate responsibilities
 - Consider registering community organizations established by RSPs and other civil-society institutions such as Village Organizations and CCBs
 - Include social-mobilization components in the design and implementation of rural development programs (Boxes 6.3, 6.4 and 6.5)
- Increase efficiency of micro-finance programs
 - Focus on savings over loans and efficiency of saving services
 - Continue to adapt saving and lending instruments to client demand
 - Increase lending to women's groups
 - Link local informal financial institutions to formal institutions

Social Protection

- Increase coverage of social protection programs
 - Pilot a targeted conditional cash transfer and scale up school-feeding programs (Box 6.6)
 - Eliminate untargeted programs (e.g. wheat flour subsidies)
 - Address problems related to heavily-indebted labor
 - Increase public awareness of unfair labor practices
 - Strengthen enforcement of existing laws regarding bonded labor
 - Launch pilot project to provide access to credit and alternative income sources for heavily-indebted workers.
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Achieving substantial growth in agricultural incomes in the future will also require greater diversification into higher-value crops that can maximize returns to scarce factors of production (land and water). This will require greater investment in agricultural research on crops such as oilseeds, vegetables and fruits as well as livestock; better coordination with the private sector in the form of public-private partnerships; and improvements in seed certification and quality control. Sound macro-management will also be required to avoid an appreciation of the real exchange rate, which would not only reduce the incomes of wheat, cotton and rice farmers, but also reduce price incentives for producers of fruits, vegetables and other items for export.

Programs to increase livestock production, especially of dairy cattle and milk in Punjab and Sindh, and sheep and goats in NWFP and Baluchistan, can have direct and significant impact on the incomes of the rural poor. As livestock ownership is more evenly spread across rural households than is access to land, productivity gains in livestock are generally more pro-poor than productivity gains of major crops. Smallholder's gains are feasible through use of improved feeds, better veterinary services, and more efficient marketing channels to help ensure remunerative prices of milk for farmers. Designing an effective program will require special attention to cultural and economic constraints faced by rural women, who have a major role in the care of livestock.

Water: The Key Resource Constraint

Increasing the efficiency of water use is critical for the sustainability of agriculture in Pakistan. Water remains the key resource constraint in Pakistan agriculture. Irrigation water is critical for agriculture in most areas of the country and massive public investments in dams and canals in the Indus river basin, together with mainly private investment in wells for groundwater irrigation have been essential for agricultural production. However, current patterns of water use in Pakistan are causing significant environmental degradation: losses of soil fertility due to agricultural soil degradation (soil salinity and erosion) are estimated at Rs 70 billion per year (1.5 percent of total GDP and 6.8 percent of agricultural GDP, 2004-05 GDP estimates). In addition to environmental losses, inefficiencies in water allocation within canal systems result in lower crop productivity at both the head end (due to over-use of water and water-logging) and the tail end (due to water shortages) of canals.

Increasing availability of surface irrigation water can only be a partial solution. There is little storage capacity (downstream of the Mangla and Tarbela dams) in northern Punjab or water control in Pakistan's run of the river irrigation system. Adding storage capacity in the form of dams could in principle help improve water availability in the dry season by spreading out the flow of water over the year. Nonetheless, even if investments to increase storage are undertaken immediately, storage capacity will not increase within the next ten years, and will likely actually decrease somewhat in this period due to silting of existing facilities. In addition, there is also a need to improve drainage systems to reduce the salinity and water logging that occur in the Indus basin irrigation system.

Improvements in water delivery (including investments in drainage, control structures and conveyance mechanisms), **better water management** (through strengthening of water course organizations, farmer organizations, area water boards or professional canal management agencies) and **greater efficiency of water use at the farm level** (crop choice and adoption of water-saving technologies) are the most promising approaches in the short to medium term. **Irrigation Departments need to establish asset management plans** that indicate measures for divestment of assets to the private sector or farmer organizations, as well as operation and

maintenance plans that include medium-term expenditure frameworks, assignment of financial responsibilities to the various actors, pricing policies and cost-recovery mechanisms. **Service delivery and water allocation can be improved through promotion of water user associations (WUAs) and farmer organizations (FOs)**, as well as through improvements in the existing infrastructure. FOs could be given the authority to collect *abiana*, as well as operation and maintenance at the distributary and branch canal level.

Financial incentives for efficient, sustainable and equitable water use can also help rationalize water use. Given that water is increasingly scarce in Pakistan, a shift away from water-intensive crops like sugar cane to less water-intensive crops such as oilseeds (sunflower and canola), maize, and vegetables irrigated with drip irrigation techniques could result in large water savings, increasing water availability downstream and reducing environmental degradation. For example, shifting 60 percent of land cultivated with sugar cane to a maize-wheat rotation or about one-quarter of ordinary rice land to maize would save enough water to supply the current needs of Karachi.

Charges for canal water (*abiana*) should be revised so that they better reflect opportunity costs of water usage and thus used as an incentive for farmers to diversify to higher value crops. However, to minimize problems of non-payment, any increase in water charges would need to be accompanied by improvements in service delivery. Raising water charges to levels commensurate with the opportunity cost of water is likely to be politically infeasible, however. One alternative is the development of markets for tradable water rights such as exist in Chile and Mexico. This would require laws establishing tradable water rates and the strengthening of local institutions to enable them to serve as brokers in water markets. Projects and programs involving agricultural extension, technical assistance, market development and credit may be needed to ease the transition of farmers and processors to alternative crops and products.

Agricultural Markets and Trade Policies

Agricultural trade and pricing policies can also significantly affect producer incentives, but distortions to prices of most agricultural products in Pakistan are small. Direct trade and pricing policy distortions, as measured by nominal rates of protection using official exchange rates, have generally declined in absolute magnitude since the early 1980s. Including the effects of exchange rate distortions, the pattern is clearer, with a sharp reduction in policy distortions over the past two decades. Significant trade taxes and restrictions on major agricultural products remain only for vegetable oil, powdered milk imports and basmati rice exports.

However, the government continues to intervene heavily in wheat markets at high fiscal costs and generally little benefit to most producers or consumers. Provincial governments (mainly Punjab and to a lesser extent Sindh) and PASSCO (Pakistan Agriculture Storage and Supplies Corporation) procure about 20 percent of total wheat production each year. On average, a similar amount is resold before the next harvest, ostensibly to prevent market manipulation by traders and millers and thus stabilize wheat market prices and supplies. One major effect of these interventions, however, is to crowd out private trade and storage. **Reducing the volume of domestic procurement (and subsequent intra-annual sales)** would directly reduce the wheat subsidy that arises from the difference between the sales price of government wheat (whether procured locally or domestically) to wheat mills and the full costs of procurement of wheat and handling. Maintaining incentives for private-sector trade through avoidance of restrictions on transport of grain (as were imposed by the government of Punjab in 2004), continued liberalization of private-sector imports, and transparent and consistent government policies can help stabilize prices and supplies, while lowering fiscal costs.

Faster growth in exports of non-traditional agricultural products (fruits and vegetables, meat, fish) will require improved capacity to meet Sanitary and Phytosanitary (SPS) standards imposed by destination countries. Pakistan presently lacks a coherent strategy (or set of strategies) for quality and SPS management in relation to its trade. Organizationally, there is a need to consolidate and augment the fragmented, isolated, and non-coordinated capacity of SPS management institutions and regulations by better defining roles and responsibilities of the various agencies involved in SPS management, strengthen technical capacity for risk assessment, and re-institutionalize early warning and surveillance systems for pests, diseases and contaminants.

THE RURAL NON-FARM SECTOR AND THE RURAL INVESTMENT CLIMATE

Agricultural growth is an important pathway out of poverty for the 40 percent of Pakistan's rural poor that are farmers; for the 45 percent of the rural poor who do not earn income from the crop sector, however, escaping poverty requires growth in rural non-farm incomes or out-migration. Simulation analyses based on a 2001-02 Social Accounting Matrix (SAM) for Pakistan indicates that growth linkage effects ensuing from increases in traditional crop agriculture are likely to result in only relatively small gains in total rural non-farm incomes relative to the large size of this sector. As a result the average percentage increase in incomes of rural non-farm poor may likewise be small. For these households, a well-developed and well-functioning rural non-farm sector is essential for employment generation, ensuring income diversification and reducing poverty (World Bank 2004b).

Results from a 2005 survey of 1651 entrepreneurs in rural villages and small towns⁹¹ in Punjab, Sindh and NWFP indicate that finance is a major constraint on the growth of the rural non-farm enterprise sector. More than 30 percent of enterprises surveyed rated access to finance as the most important overall constraint to the operation and growth of their business. There appears to be considerable unmet demand for formal credit; less than 20 percent of entrepreneurs that seek formal credit for start-up capital or investment purposes received credit. The major source of formal financing is from commercial banks, but access to these institutions is limited in rural villages; most small-town enterprises however are located in close proximity to a commercial bank. Only about one percent of start-up and working capital for rural and small town enterprises comes from formal banking sources.

Even when entrepreneurs have physical access to commercial banks, they are constrained by an inability to provide sufficient collateral. Eighty percent of approved loans required collateral. On average the value of collateral required for a loan was about 132 percent of the loan amount, making it difficult for households without substantial land or property to gain access to formal credit.

While improving financial access for non-farm enterprises is important, survey findings also reveal that most rural enterprises are not able to put together a financial statement, and face problems in marketing their products and hence are probably unable to meet the expectations of financial institutions' due-diligence processes. Therefore in addition to improving supply-side conditions, technical assistance in bookkeeping, documentation, training

⁹¹ Small towns are defined as town councils and municipal councils with populations less than 100,000.

in business management and entrepreneurial skills for rural enterprises would significantly improve their access to credit and overall business development. Although access to formal medium- to long-term financing is limited, Pakistan's non-farm enterprises seem to have comparatively better access to supplier credit. Traders are the main beneficiaries of supplier credit which is extremely short-term in nature (with a median loan term of 2 weeks).

According to the survey, village enterprises were more affected by poor infrastructure than those located in small towns. Road quality, availability of transport, and access to electricity also rank among the top constraints reported by village entrepreneurs. Quality and access to electricity were the major infrastructure problem cited by small-town businesses. Of the three provinces surveyed, villages in Sindh fared the worst in terms of road quality and availability of transport facilities for goods. Access to electricity remains a major challenge in many rural villages and small towns, and even among enterprises with access, reliability of supply is uncertain. The median number of power outage days in a typical month were reported as 20 in villages and 15 in small towns. Frequent outages increase production costs and generators are usually unaffordable for small businesses. Only five percent of village enterprises and around seven percent of small town enterprises reported owning or sharing a generator. Power outages are particularly costly for manufacturing enterprises. While small-town and village entrepreneurs surveyed did not complain much about telecommunications, access to and use of telecommunications among enterprises is surprisingly low, particularly considering that close to 60 percent of the enterprises were traders. Only 31 percent of entrepreneurs in small towns owned fixed line phones or cellular phones; the comparable figure in villages is nine percent.

Relatively few firms cited as a constraint governance issues. This differs significantly from the findings of the 2003 urban ICA, in which 40 percent of businesses rated corruption as a major or severe constraint. There are however regional differences. Firms located in small towns of Punjab were more likely to complain of policy uncertainty and those in small towns in Sindh were more likely to cite problems with crime and corruption. Overall however, less than three percent of approximately 900 firms reported the need to pay an illegal fee. Although few firms mention crime or corruption, contract enforcement and confidence in the legal system remain a concern for many enterprises, particularly in Sindh.

As close to half of all rural households in Pakistan are primarily non-farm households and thus heavily dependent on non-agricultural incomes, attention to the constraints facing small-town and village entrepreneurs will be necessary to ensure that this sector is able to grow and generate more employment. Doing so will require a combination of investments, improvements in service delivery and policy reforms. Technical assistance in the forms of business development services and strengthening local business organizations would also be beneficial. Overall improvements in human-resource development and greater levels of literacy are also needed as the survey data clearly indicate that firms with more educated managers are more likely to innovate and tap into business networks and consistently seem to perform better.

IMPROVING PUBLIC SERVICE DELIVERY

Provision of basic rural infrastructure and delivery of basic public services such as water supply, sanitation and roads, is crucial for rural economic growth and improved welfare of the rural poor. Pakistan's devolution program, begun in 2002, was designed to improve public-service delivery by increasing the decision-making and implementation authority of local governments and augmenting their fiscal resources. Evidence from case studies in eight districts

in Punjab, Sindh and NWFP suggests that devolution has been broadly successful in achieving these goals, though more remains to be done even in the most successful cases.

Fiscal resources for rural development have increased at the federal and provincial levels since 2001-02; changes in the level of resources at the district levels vary by province. From 2001-02 to 2005-06, total consolidated expenditures (fiscal and provincial), government revenues and the budget deficit all increased by 23 to 26 percent in real terms. A large share of these additional resources was devoted to development expenditures, which increased by 85 percent (18.1 percent per year), reflecting the government's commitment to development investments. Growth in development expenditure was particularly rapid at the provincial level (48.8 percent per year) as compared to the federal level (10.6 percent per year). Total transfers to local government (districts, *tehsils* and unions) varied by province, however. Average transfers to local governments in Sindh in 2004-05 and 2005-06 were 50 percent higher in real terms than the average of 2002-03 and 2003-04; in Punjab and NWFP, by contrast, there was essentially no change over time. It is noteworthy that large increases in expenditure for health and education at the district level are not shown in these budgets, however.

Resources vary enormously across districts, *tehsils* and villages. In a survey of seven districts in Punjab, Sindh and NWFP, availability of resources per capita ranged from 981 Rs/person in Sargodha (Punjab) to 2000 Rs/person in Chakwal, also in Punjab. On average, current expenditure accounted for 80 percent of total expenditure (salaries alone accounted for 63 percent) and the share of resources devoted to development expenditures nevertheless ranged from 3-35 percent. **Even wider variation in fiscal resources is found at the TMA level, with** expenditure per capita more than eight times as high in Digri (381 Rs/person) and Khairpur (361 Rs/person) as in Timergarah and Samarbagh of NWFP (both 44 Rs/person). In part, this difference in resources reflects a greater ability of some *tehsils* to raise their own revenues through local taxes and fees; district awards to *tehsils* also vary, from only 11 Rs/capita in the two NWFP *tehsils* sampled to 240 Rs/capita in Khairpur.

Even five years after devolution, confusion remains over the roles and responsibilities of the various levels of government, as well as apparent jurisdictional overlaps. Staff shortages and lack of appropriate skills are also serious constraints to efficient service delivery, particularly at the TMA level. Moreover, the transfer of resources through the vertical programs and other higher-level government programs adversely affects local governments' autonomy in preparing development budgets as well as undermining accountability and operational efficiency. Substantial resources are allocated, especially in the water and sanitation sector, through Members of the National Assembly (MNAs), Members of Provincial Assemblies (MPAs) and directives of the Chief Minister.

The delegation of power to local governments through devolution has brought decision making closer to the communities and allowed them to access government officials and there has been some improvement in service delivery. As reported by all 14 *tehsils* surveyed (except Bahawalpur) citizens' degree of access to their representatives has increased considerably and problems are solved relatively quickly under the new system. Priorities of the local communities are also increasingly reflected in development schemes. However, the performance of Citizen Community Boards (CCBs) in terms of their financial contribution as a percentage of government financing of development expenditures at the district level varies substantially, from only 2-6 percent in the three districts of Sindh sampled to 22-34 percent in the three Punjab districts.

IMPROVING THE EFFECTIVENESS AND GOVERNANCE OF RURAL INSTITUTIONS

Devolution in 2002 was an important step toward a more decentralized, efficient and demand-driven government in Pakistan. In addition to increasing resources for local government and improving its administrative capacity, other measures are needed to improve the effectiveness and governance of rural institutions. Greater interaction between private-sector groups and farmers in the form of public-private partnerships could facilitate government responsiveness and improve efficiency of investments and programs. Measures that improve governance and accountability such as stricter enforcement of laws, reforms in the legal system and wider dissemination of information on spending and effectiveness of programs would also help spur both greater efficiency of government, as well as growth and investment in the private sector.

Public-private partnerships (PPPs) should be pursued aggressively in agricultural marketing, research and extension, health, education, infrastructure and other sectors to enhance productivity of public-sector programs. An incentive structure should be put in place to encourage the private sector to enter into contractual arrangements with farmer organizations and link delivery of public services to business development. Public-private partnerships in agricultural research and extension would encourage public research systems to become more responsive to farmers' actual needs. Recent education sector reforms undertaken by the government should be strengthened to enable engagement with private and NGO schools to improve access and quality of education, including government-supported per child subsidies. Finally, government financial support could be increased for NGOs, including Rural Support Programmes for delivery of micro-credit, skills training and other private services.

Improving governance is crucial for reducing poverty and promoting growth in both the farm and non-farm sector. Governance issues, including political instability, corruption, insecurity and lingering conflicts, are a major drag on investment, economic growth and efforts to reduce poverty. Bureaucracies with low accountability to stakeholders give rise to inefficiency and shortfalls in delivering rural services. To overcome these challenges, the government should strengthen efforts begun in recent years to: i) reform government institutions related to economic and financial management, the police, the judicial system, and the civil service; (ii) improve public financial management, accountability, and increased transparency and information on government activities to facilitate public oversight; (iii) strengthen local government institutions; and (iv) privatize and deregulate public enterprises to reduce opportunities for rent-seeking behavior.

Monitoring and evaluation within a national and results-based management framework is increasingly important with burgeoning CDD and microfinance programs as there is greater uncertainty about what will work than in traditional projects. There is a need for up-front poverty indicators and simple baseline assessments and ongoing monitoring of indicators against targets. Although "better M&E" is so often mentioned as to be almost a clichéd recommendation, the increase in CDD projects and microfinance, which by their nature are uncertain and require rapid management reactions, effective M&E with a poverty impact focus becomes much more important.

EMPOWERING THE POOR AND PROTECTING THE MOST VULNERABLE

Increasing the flow of resources to local governments and improving administrative procedures addresses mainly the **supply of public services**. Improving the effectiveness of development programs requires more **effective demand for public services**, as well. In addition, although inclusive economic growth should be the main mechanism for reducing poverty, increased **social protection** efforts are needed to protect the most vulnerable.

A major reason for the limited impact of rural development efforts in Pakistan and many other countries is a lack of effective participation and influence of rural poor households in development programs and rural society. Too often, a top-down approach has been implemented, one in which the rural poor are simply beneficiaries of public programs supplied by the government. Rather, the development paradigm should put the household and the community at the origin of development initiatives. Empowering the rural poor to take on this role, however, requires social mobilization, a central pillar of the government's Mid-Term Development Framework (2005-10).

Social mobilization can be defined as the enhancement of the community's capacity for collective action for its own betterment. Together with economic empowerment and graduation, it should be at the heart of the rural livelihood development strategy. Mobilizing the poor, a major component of Pakistan's Rural Support Programmes (RSPs), provides them with the voice and the scale required to more effectively engage with the range of institutions and individuals that provide public and private services. Economic empowerment, e.g. through micro-credit or skills training, facilitates access to assets, increases incomes, and demonstrates the creditworthiness of individuals and groups. Ultimately these self-help groups may graduate to form other federative and associative movements involved in income-earning activities such as: public-private partnerships, various types of franchising and contract farming arrangements.

Social-mobilization components have been incorporated into various rural development projects and programs, often together with micro-credit and public investment under the broad rubric of community-driven development (CDD). In principle, governments may be best suited for delivery of public goods and services (and the investments required to support these) and the private sector and NGOs best suited for delivery of private goods and services (including micro-credit and skills training). However, the best institutional pathway to promote active community participation and their linkages with both public and private sectors is debatable, and depends on the particular characteristics of communities, government institutions and development constraints.

In areas where local government institutions are still unable to effectively deliver public services, direct interventions through community organizations and NGOs are still necessary. These programs work best where there are existing strong community groups; rural micro-level infrastructure and public health are especially important in isolated areas. **To ensure long-term sustainability, however, it is important that these efforts do not undermine efforts intended to strengthen local government institutions.**

Microfinance programs, typically run through NGOs, including the Pakistan Poverty Alleviation Fund (PPAF), also channel money to rural areas, although this is mainly to individual households and enterprises. Global experience with microfinance suggests a number of relevant lessons for Pakistan, such as: (i) the need to focus on *savings* and the efficiency of savings services as these may be even more important for the poor than credit, and micro-credit

without savings institutions is likely unsustainable; (ii) the need to continually assess product *demand* and to design savings and lending products to meet that demand (informal lenders, and even the staff of credit institutions themselves, have been able to develop suitable products); (iii) the exceptional qualified success with lending to women (the majority of sustainable loan initiatives worldwide have involved women) suggests that the *comparative* advantage within the household may be large, although socially acceptable mechanisms to lend to women may differ across localities; and, (iv) the importance of finding efficient ways of linking local informal rural finance institutions to formal institutions.

Greater efforts need to be made to protect the most vulnerable households and individuals, as well. Safety net programs to supplement the incomes of the poorest households remain very limited, particularly in rural areas. The largest program, *Zakat*, is financed through a voluntary levy of 2.5 percent of the value of financial assets deducted once a year and covers 1.733 million beneficiaries at a total cost of Rs 5.86 billion. The *Pakistan Bait-ul-Mal*, a Federal government agency that delivers vertical social welfare programs financed from general revenues, includes the Food Support Program, which delivers Rs 4.5 billion cash transfers to 1.25 million beneficiaries. Together with the *Tawana* Pakistan program that provides mid-day meals to 530,000 girls in government rural primary schools at an annual cost of Rs 0.70 billion, these safety net schemes total only Rs 11.1 billion, 0.23 percent of GDP. The other major social assistance program, the wheat subsidy, costs Rs 8 billion, is untargeted and is unlikely to provide much benefit to poor rural households, except to the extent that net wheat sales from public sector imports and drawdown of government stocks lower market prices.

Safety nets for both the rural and urban poor should be made more efficient and scaled up to cover all ultra-poor households and some poor households (4-11 million households), largely through increased use of conditional cash transfers. The wheat subsidy program could be replaced by a food- or cash-based targeted program. Cash transfer programs such as the Food Support Program can be scaled up and the scope of these programs widened to encourage long-term human capital investments among the poor, for example based on the pilot of the Child Support Program. The *Tawana* Pakistan school feeding program should, similarly, be redesigned and scaled up. Nutritional interventions aimed at improving health and nutrition of women and infants ought to be piloted and scaled up. The government could also consider piloting a major rural workfare program in order to provide temporary employment for vulnerable households. Programs are also needed to address the problem of heavily-indebted laborers, which persists particularly among landless sharecroppers in rural areas of southern Punjab and northern Sindh.

CONCLUSIONS

Many of the constraints on the efficient use of resources, economic growth and poverty reduction discussed in this report have long been recognized: inefficient water usage, unequal distribution of land and incomes, low levels of infrastructure and delivery of public services. Several factors have changed, however. Environmental degradation has become increasingly serious, as has competition for rural and urban water uses. Agriculture's share of the overall economy has declined and the rural economy has become more closely integrated with urban and international economies. The latter two factors, along with the highly skewed distribution of land, offset but do not eliminate the impact of agricultural growth on rural poverty.

Nonetheless, Pakistan has made important strides in the last several years in promoting rural growth and poverty reduction. There has been substantial progress in liberalizing agricultural markets, promoting diversification and exports, and increasing expenditures on

infrastructure and public services in rural areas. Progress has also been made in empowering the poor through social mobilization (Rural Support Programmes and the creation of CCBs) and microfinance (the Pakistan Poverty Alleviation Fund). These efforts should be continued and strengthened. In addition, rapid and sustained reduction of rural poverty will require an even greater focus on building human capital (through improved delivery of health services and sanitation, basic education and appropriate technical training).

Moving forward, it will be crucial to maintain a multi-faceted approach to rural development and poverty reduction and to ensure that sufficient resources are invested in the task. Efficient agricultural growth is a necessary condition for robust rural economic growth, but in and of itself cannot be expected to drive substantial reductions in rural poverty in light of the highly unequal distribution of access to land and water resources in Pakistan. Thus, policies to promote agricultural growth must be complemented by investment and policies that create an enabling environment for the rural non-farm sector, including increased public investment in rural and small-town infrastructure. This will require shoring up the effectiveness and governance of rural institutions through decentralization, strengthening local demand for public services and public-private partnerships. Finally, because the ultimate objective of any poverty reduction strategy is to increase the welfare of the poor, health and education programs that promote the human capital of the rural poor, social mobilization that empowers and social protection programs that protect the most vulnerable should all receive increased resources and attention.

REFERENCES

- Agrodev. 2000. Sindh Rural Development Project-Final Report prepared for Planning and Development. The Government of Sindh and the Asian Development Bank, October 2000, Agrodev Canada Inc.
- Ahmad, Munir. 2002. "Productivity Growth Differential in Punjab, Pakistan: A District-Level Analysis," *The Pakistan Development Review*, Vol. 40, No. 1: 1-25.
- Ahmad, Munir, Chand, Asghar and Nasir, Alam Khan. 1993. "Participation of rural Women in Agricultural and Household Activities: A Micro-Level Analysis," Haider, A.S., Hussain, Z., McConnen, R. and Malik, S.J. (eds.) *Agriculture Strategies in the 1990s: Issues and Policies*. Islamabad: Pakistan Association of Agricultural Social Sciences.
- Ali, Mubarak and Derek Byerlee. 2002. "Productivity Growth and Resource Degradation in Pakistan's Punjab: A Decomposition Analysis," *Economic Development and Cultural Change* Vol. 50: 839-863.
- _____. 2004. Productivity Growth and Resource Degradation in Pakistan's Punjab: A Decomposition Analysis, World Bank Policy Research Working Paper No 2480.
- Arif, G. M. 2003. Urbanization in Pakistan: Trends, Growth and Evaluation of the 1998 Census, in UNFPA (2003) *Population of Pakistan: An Analysis of 1998 Population and Housing Census* Kemal, A.R., Irfan, M. and Mahmood, N. (eds.) Pakistan Institute of Development Economics.
- Asian Development Bank and World Bank. 2005. *Sri Lanka: Improving the Rural and Urban Investment Climate*. Washington DC: World Bank.
- Cororaton, Caesar B. and David Orden. 2007. "Inter-sectoral and Poverty Implications of Changes in Cotton and Textile Policies in Pakistan: A CGE Analysis". Draft Research Report. Washington, D.C. International Food Policy Research Institute.
- Datt, Gaurav and Martin Ravallion. 1998. "Farm productivity and rural poverty in India," *Journal of Development Studies*. No. 34 (April).
- Dorosh, Paul A., Muhammad Khan Niazi and Hina Nazli. 2003. "Distributional Impacts of Agricultural Growth in Pakistan: A Multiplier Analysis," *The Pakistan Development Review*. 42(3): 249-275.
- Dorosh, Paul. and Sohail J. Malik. 2006. Transitions Out of Poverty: Drivers of Real Income Growth for the Poor in Rural Pakistan. Background Paper. Washington, D.C.
- Dorosh, Paul and Abdul Salam. 2006. Wheat Markets and Pricing in Pakistan: Political Economy and Policy Options. Background Paper. Washington, D.C.
- _____. 2007. Trade and Price Policy Distortions in Pakistan Agriculture. Background Paper. Washington, D.C.

Dorosh, Paul. 2006. Distributional Impacts of Agricultural Growth. Background Paper. Washington, D.C.

de Ferranti, David, Guillermo E. Perry, William Foster, David Lederman, and Alberto Valdés. 2005. "Beyond the City: The Rural Contribution to Development." Latin American and Caribbean Studies, World Bank. Washington, D.C.

Deolalikar, A. 2005. *Attaining the Millennium Development Goals in Pakistan*. South Asia Human Development Sector, Discussion Paper Series Report No. 8. World Bank. Washington, D.C.:

Fafchamps, Marcel and Agnes R. Quisumbing. 1999. Human Capital, Productivity, and Labor Allocation in Rural Pakistan. FCND Discussion Paper No. 48. Food Consumption and Nutrition Division. International Food Policy Research Institute. Washington, D.C.

Food and Agriculture Organization (FAO). 2006. Food Balance Sheets. www.fao.org.

Feeney, Griffith and Iqbal Alam. 2003. Fertility, Population Growth and Accuracy of Census Enumeration in Pakistan 1968–1998. *Population and Development Review*, October 15

Government of Pakistan. various issues. Household Income and Expenditure Survey. Federal Bureau of Statistics, Islamabad.

_____. various issues. Pakistan Rural Household Survey. Federal Bureau of Statistics, Islamabad.

_____. various issues. Pakistan Economic Survey. Economic Advisor's Wing, Ministry of Finance, Islamabad.

_____. various issues. Monthly Statistical Bulletin. Federal Bureau of Statistics, Islamabad.

_____. 1985. Rural Credit Survey of Pakistan. Agricultural Census Organization, Lahore.

_____. 1999. Agricultural Statistics of Pakistan. Ministry of Food, Agriculture and Livestock, Islamabad

_____. 2002. Water Vision 2025 Country Report, cited in World Bank 2003. Pakistan Public Expenditure Management, Accelerated Development of Water Resources and Irrigated Agriculture, Vol. II.

_____. 2003. Cost of Production series data for various crops. Agricultural Prices Commissions (APCOM), Ministry of Food, Agriculture and Livestock, Islamabad.

_____. 2005. Pakistan Social and Living Standards Measurement Survey. Federal Bureau of Statistics, Islamabad.

Government of Punjab (various issues), Annual Budget Reports. Punjab Department of Finance, Islamabad.

Jacoby, Hanan G. and Mansuri, Ghazala. 2007. "Incomplete Contracts and Investment: A Study of Land Tenancy in Pakistan. World Bank Policy Research Working Paper No. 3826.

_____. 2007. "Incentives, Supervision, and Sharecropper Productivity". World Bank Policy Research Working Paper No. 4125.

Karim, M. S. and A. Nasar. 2003. Migration Patterns and Differentials in Pakistan in Kamal A.R., et. al. *Population of Pakistan*. Pakistan Institute of Development Economics, Islamabad.

Malik, Sohail J. 1999. Poverty and Rural Credit: The Case of Pakistan. Pakistan Institute of Development Economics, Islamabad.

_____. 2003. Rural Credit Markets in Pakistan: Institutions and Constraints. Background paper for World Bank Pakistan Rural Factor Markets study.

Nazli, Hina. 2003. Rural Labor Markets in Pakistan: Institution and Constraints. Background paper for World Bank Pakistan Rural Factor Markets study.

Niazi, Muhammad Khan, Nuzhat Ahmad and M. Khalid. 2006. Rural Service Delivery in Pakistan. Case Study. Background paper for Pakistan Spurring Rural Growth and Poverty Reduction report.

Nuzhat, Ahmad 2006. Improving Rural Service Delivery: Rural Institutions at the Community and Local Government Levels. Background paper for Pakistan Spurring Rural Growth and Poverty Reduction report.

Orden, David, Abdul Salam, Reno Dewina, Hina Nazli and Nicholas Minot. 2005. *The Impact of Global Cotton Markets on Rural Poverty in Pakistan*. Pakistan Poverty Assessment Update, Background Paper Series. Asian Development Bank, Islamabad.

Pakistan Poverty Alleviation Fund (PPAF). 2003. Annual Report. World Bank.

Population Reference Bureau. 2001. World Population Data Sheet. Quoted in Pakistan Demographic Survey 2001. Washington, D.C.

Riaz, Khalid. 2006. Analyzing Success Stories in Agricultural Development in Pakistan: Case Studies of Milk Processing Sector, Tunnel Farming for Vegetables, Citrus Marketing and Exports. Background Paper. Islamabad.

Stone et al. 2006. *Assessment Report: Pakistan Devolution Support Project, prepared for USAID*. The Urban Institute (unpublished report). Washington, D.C.

Sur, Mona and Zhang Jian. 2006. The Pakistan Rural Investment Climate Survey. Background Paper. World Bank. Washington, D.C.

WAPDA 2002. Pakistan Water Sector Strategy. Ministry of Water and Powers Report.

World Bank. 2003. Poverty Reduction Strategy Paper on Pakistan, Report No. 25463-PAK. Washington, D.C.

_____. 2004a. Agriculture Investment Sourcebook. Agriculture and Rural Development Unit. Washington, D.C.

_____. 2004b. Pakistan Rural Factor Markets Policy Reforms for Growth and Equity. Report No. 30381-PK. Washington, D.C.

_____. 2004c. Trade Policies in South Asia: An Overview. vol. II: An Overview. Washington, D.C.

_____. 2004d. Devolution in Pakistan – Main Report: An Assessment & Recommendations for Action. Report No. 29912-PK. Washington, D.C.

_____. 2005a. Sindh Economic Report. Washington, D.C.

_____. 2005b. Pakistan Country Water Resources Assistance Strategy. Water Economy: Running Dry, Report No. 24081-PK. Washington, D.C.

_____. 2005c. Reducing Poverty on a Global Scale. “Case study on Andhra Pradesh”; project documents. Washington, D.C.

_____. 2005d. India: Re-energizing the Agricultural Sector to Sustain Growth and Reduce Poverty. New Delhi. Oxford University Press/World Bank.

_____. 2005e. India National Agricultural Innovation Project. Project Information Document (PID).

<http://www.worldbank.org.in/external/default/main?pagePK=64027221&piPK=64027220&theSitePK=295584&menuPK=295617&Projectid=P092735>

_____. 2006a. Pakistan: Growth and Export Competitiveness; Report No. 35499-PK. Washington, D.C.

_____. 2006b. Summary of Key Findings and Recommendations (Note on poverty estimates by Tara Vishwanath and Nobuo Yoshida). <http://siteresources.worldbank.org/INTSAREGTOPPOVRED/1337567-1152551765388/20987772/PovertyHCR2000-2005.pdf>

_____. 2006c. *The Rural Investment Climate: It Differs and It Matters*. Agriculture and Rural Development Department Report No. 36543-GLB. Washington, D.C.: World Bank.

_____. forthcoming. Pakistan: Social Protection. Washington, D.C.

Websites consulted

www.pak.gov.pk

www.fao.org

www.finance.gov.pk

www.us.ilo.org/archive/ilofocus/2001/winter

www.worldbank.org

www.adb.org

www.unesco.org

www.iae.a.org